

**DUE DATE SLIP****GOVT. COLLEGE, LIBRARY**

KOTA (Raj.)

Students can retain library books only for two weeks at the most.

BORROWER'S No.	DUE DTATE	SIGNATURE

2. Milton :           (1) On his 24th Birthday  
                          (2) On his Blindness
3. Goldsmith :       Deserted Village (in place of  
                          Ben Jonson)
4. Wordsworth :     (1) The Solitary Reaper  
                          (2) The World is too much  
                                  with us.  
                          (3) Daffodils
5. Keats (in           (1) Bright Star  
   place of           (2) On first Reading into  
   Byron)           Chapman's Homer
6. Tennyson :       (1) Break, Break, Break  
                          (2) Tithonus (in place of  
                                  Crossing the Bar)
7. Browning :       Home Thoughts from Abroad  
                          (in place of Prospice)

(iii) *Guide* by R.K. Narayan shall replace his *The Bachelor of Arts*.

(c) *II Year TDC (Literature) 1981*

(i) From *The Penguin Book of English Verse*, ed. Hayward the following poems are prescribed :

- (1) Donne :           The Good Morrow, Lover's  
                          Infiniteness
- (2) Marvell :       1. The Garden  
                          2. To his Coy Mistress
- (3) Milton :       From *Paradise Lost*  
                          (1) Invocation  
                          (2) The Fallen Angels  
                          (3) Satan's Adjuration  
                          (4) The Place of the  
                                  Damned
- (4) Dryden :       A Song for St. Cecilia's Day
- (5) Pope           (1) From *An Essay on*  
                          *Criticism*



(2) From *The Rape of the Lock*

(6) Gray : Elegy Written in a Country Churchyard.

(7) Collins : Ode to Evening

(8) Blake : (1) The Tiger  
(2) London.

(ii) Shakespeare's *As You Like It* shall replace Bernard Shaw's *Arms and the Man*.

(iii) Brecht's *The Caucasian Chalk Circle* be dropped.

## Paper II

(i) *A Book of English Essays* ed. by W.E. Williams (Penguin) for detailed study.

The following two changes are recommended :

Lamb : "Poor Relations" in place of 'Convalescents'.

Chesterton : 'Price of Chalk' in place of 'Penny Dreadfuls'.

Rest of essays : No change.

(ii) Hardy's *Mayor of Casterbridge* (Macmillan) shall replace Dicken's *A Tale of Two Cities* for non-detailed study.

(d) *III Year TDC (Literature) 1981*

## Paper I : Drama

(i) Shakespeare's *Macbeth* shall replace his *Hamlet*.

(ii) Brecht's *The Life of Galileo* translated by D.L. Vessey and ed. by Miss A.G. Stock (OUP) shall replace Oscar Wilde's *Lady Windermere's Fan*.

## Paper II : Poetry

From *The Penguin Book of English Verse*, ed. Hayward (Penguin) the following poems are prescribed :

- |                   |  |
|-------------------|--|
| ( 1) Wordsworth : | From <i>The Prelude</i>                                |
|                   | (1) Childhood and School Time                          |
|                   | (2) There Was a Boy                                    |
|                   | (3) Conclusion   |
| ( 2) Coleridge :  | (1) Dejection, an Ode                                  |
|                   | (2) Frost at Midnight                                  |
| ( 3) Byron :      | (1) The Eve of Waterloo                                |
| ( 4) Keats :      | (1) Ode to Autumn                                      |
|                   | (2) Ode to a Nightingale                               |
| ( 5) Shelley :    | (1) Ode to the West Wind                               |
|                   | (2) Chorus from <i>Hellas</i> .                        |
| ( 6) Arnold :     | The Scholar Gypsy                                      |
| ( 7) Browning :   | My Last Duchess  |
| ( 8) Hardy :      | (1) The Self Unseeing                                  |
|                   | (2) The Voice  |
|                   | (3) After a Journey                                    |
| ( 9) Owen :       | Strange Meeting  |
| (10) Brooke :     | The Soldier  |
| (11) Auden :      | Ist September 1939                                     |
| (12) Spender :    | (1) I Think Continually of those who were truly great. |
|                   | (2) Elegy for Margaret.                                |

(e) *B.A. Hons. Part I (3 Year Course)*

## Paper I : English Language

- |                       |          |
|-----------------------|----------|
| 1. Comprehension      | 20 Marks |
| 2. Composition :      |          |
| (a) Paragraph Writing | 10 marks |
| (b) Essay Writing     | 20 marks |
| (c) Summarizing       | 10 marks |

3. Grammar and Usage 25 marks
- (a) Anomalous Finites (as in Hornby, *Guide to Patterns and Usage*, 2nd edn., OUP, 1975, pp. 1-12)
- (b) Time and Tense (*Ibid.*, pp. 78-111)
- (c) Nouns, Determiners and Adjectives (*Ibid.*, pp. 112-163)
- (d) Adverbials (*Ibid.*, pp. 164-192).
4. Paraphrase of an unseen poem 15 marks

### Books Prescribed

1. A.S. Hornby, *Guide to Patterns and Usage in English*, 2nd edn., OUP, 1975, Price 8 S.
2. L.G. Alexander, *Poetry and Prose Appreciation: for Overseas Students*. Orient Longman, 1963.

### Paper II : Wordsworth to George Eliot

*Wordsworth :	(1) Tintern Abbey (2) Immortality Ode (3) Ode to a Nightingale
*Keats :	Hyperion
*Shelley :	Adonais
Coleridge .	Christabel (both parts)
Byron :	The Isles of Greece; She Walks in Beauty
Jane Austen .	<i>Pride and Prejudice</i>
Dickens :	<i>Great Expectations</i>

Essays written by Hazlitt and Charles Lamb from *A Book of English Essays*, ed. W.E. Williams (Penguin)

George Eliot : *Adam Bede*

(Note : The texts on authors marked with aestrisk are intended for detailed study.)

(f) *B.A. Hons. Part II* (3 Year Course)

## Paper I : Milton to Johnson

*Milton :	Lycidas On his 24th Birthday On the Morning of Christ's Nativity.
*Dryden :	St. Cecelia's Day Alexander's Feast Mac Flecknoe
*Pope :	<i>The Dunciad</i> , Bk. 1
Swift :	<i>Gulliver's Travels</i>
Fielding :	<i>Joseph Andrews</i>
Congreve :	<i>The Way of the World</i>
Johnson :	<i>Rasselas</i>

(Note : The texts of Authors marked with asterisk are intended for detailed study).

## Paper II : Social and Political History

*Books Recommended :*

1. *English Social History* by G.M. Trevelyan
2. *English History* by G.M. Trevelyan

(g) *B.A. Hons. Part III* (3 Year Course)

## Paper I : Arnold to Eliot

*Matthew Arnold :	The Scholar Gypsy
*Tennyson :	Ulysses The Lady of Shallot The Lotus Eaters
*Eliot :	The Love Song of J. Alfred Prufrock The Portrait of a Lady
*Yeats :	The Wild Swans at Coole Easter 1916 The Tower

Conrad :	<i>Heart of Darkness</i> or
Hardy :	<i>Tess</i>
V. Woolf : *	<i>A Room of One's Own</i>
J. Joyce :	<i>A Portrait of the Artist as a Youngman.</i> or
	<i>Dubliners</i>
T.S. Eliot :	<i>Murder in the Cathedral</i>

(Notes : Poets marked by aestrisk are for detailed study).

### Paper II : Shakespeare and his Contemporaries

Shakespeare :	* <i>Hamlet</i> <i>Twelfth Night</i>
Marlowe :	<i>Edward II</i>
Webster :	* <i>The Duchess of Malfi</i>

\*Metaphysical Poetry : Donne, Herbert, Marvell, Vaughan from *A Book of English Poetry*, The Penguin Poets, ed. by Harrison.

(Note : The texts or authors marked with an aesterisk are intended for detailed study).

Paper III : Either	(a) American Literature
*e.e. cummings :	Essay, "Introduction to <i>New Poems</i> ." My Sweet old, etc. You shall above all things be glad and young Pity this busy monster, manunkind. What if a Much of a Which of a Wind When Lilacs Last in the Dooryard Bloomeed.
*Walt Whitman :	

*Emily Dickinson :	The Morns are Meeker Than They Were. I taste a liquor never brewed. Hope is the thing with feathers, I like it to lap the miles. Because I could not stop for death.
Hawthorne :	<i>The Scarlet Letter</i>
Fitzgerald :	<i>The Great Gatsby</i>
T. Williams :	<i>The Glass Menagerie</i>
O. 'Neill :	<i>The Hairy Ape</i>

(Note : Poets marked by astrisk are for detailed study).

# OR

## Paper III (b) Indo-Anglian and Anglo-Indian Litt.

- From *A Book of English Verse on Indian Soil*, by R.P.N. Sinha, Orient Longman, Rs. 12.50.  
 Rudyard Kipling : Ganga Devi  
 Sarojini Naidu : Bangle Sellers  
 Sir Edwin Arnold: Birth of Buddha  
 Toru Dutt : Savitri  
 Rabindranath Tagore : "I have seen....."  
 Dom Moraes : Kanheri Caves  
 Aurobindo Ghose : Two Poems  
 Sir William Jones : A Hymn to Narayana.
- Jawaharlal Nehru : *Autobiography*.
- R. Tagore : *Post Office*
- Kamala Markandaya : *The Nowhere Man* (Sangam Books)
- George Orwell : *Burmese Days*.
- R.K. Narayan : *Maneater of Malgudi*
- V.S. Naipaul : *House for Mr Biswas*

## Paper IV : Either (a) Study of Epics in Translation

- Homer : *The Iliad*  
*The Odyssey*

2. Virgil : *The Aeneid*

*Suggested reading :*

- (1) Paul Merchant, *Epic*, Methuen, 1971.
- (2) *Homer : Twentieth Century Views*, ed. Steiner and Fagles, Prentice Hall, 1962.
- (3) W.F. Jackson Knight, *Roman Virgil*, Faber, 1944.
- (4) C.M. Bowra, *Homer*, Duckworth, 1972.
- (5) Gilbert Murray, *The Literature of Ancient Greece*, Chicago, 1956.

OR

- (b) The Study of Greek Tragedy with Special reference to :

- (1) Aristotle : *Poetics*
- (2) Sophocles : *Oedipus the King*  
*Antigone*
- (3) Aeschylus : *The Oresteian Trilogy*
- (4) Euripides : *The Bacchae*

*Suggested Reading :*

1. Humphry House, *Aristotle's Poetics*.
2. H.D.F. Kotto, *Greek Tragedy*, Methuen, 1939.
3. A.J.A. Waldoch, *Sophocles*, Cambridge, 1966.
4. John Jones, *On Aristotle and Greek Tragedy*, Chatto and Windus, 1962.
5. H.J. Rose, *A Handbook of Greek Literature*, Methuen, 1935.

(h) *Higher Proficiency Certificate Course in English*

The following titles be added to the list of Recommended books :

1. *Modern English*, by N. Krishnaswamy (Macmillan).
2. *Written Communication in English*, Sarah Freeman (Orient Longman)

(i) *M.A. II Semester**IV Paper* (Wordsworth to Byron)Jane Austen's *Sense and Sensibility* shall replace her *Mansfield Park*.*Paper III*—Twentieth Century Literature.Bernard Shaw's *St. Joan* shall replace his *Pygmalion*.(j) *M.A. III Semester**Paper IV* : Commonwealth LiteratureMulk Raj Anand's *Coolie* shall replace his *Untouchable*.(k) *M.A. IV Semester**Paper IV* : Commonwealth LiteraturePatrick White's *The Ives of Man* shall replace his *Riders in the Chariot*.

## PAPER I MODERN ENGLISH USAGE AND LANGUAGE

## Either SYLLABUS I

1. Comprehension
2. Grammar
3. Pronunciation of English
4. Written English
5. Practical criticism

## SEMESTER I

1. Comprehension
2. Grammar :
  - (a) Basic Sentence Patterns
  - (b) Noun Group and Verb Group
  - (c) Compound and Complex Sentences
  - (d) Synthesis of Sentences
  - (e) Anomalous Finites and their functions
  - (f) Tenses



## 3. Pronunciation of English :

Ability to pronounce words of English with proper stress by consulting a dictionary like the Oxford Advanced Learners' Dictionary of Current English.

## 4. Written English

- (a) Paragraph Writing
- (b) Letter Writing

## 5. Practical Criticism :

Appreciation of Prose Texts.

*Books Prescribed*

For Comprehension, Pronunciation of English and Written English :

English Through Reading, Vol.-I, Bhaskar and Prabhu  
( Macmillan )

*For Grammar :*

- 1. English at Home-W.R. Lee (E.L.B.S.)
- 2. English Grammar-Scott, Bowley, et. al. (Heinemann)
- 3. Guide to Patterns and Usage in English-A.S. Hornby (ELBS)

*For Practical Criticism :*

- 1. Poetry and Prose Appreciation-L.G. Alexander (Orient Longman)
- 2. Reading and Discrimination-Denys Thomson (Chatto and Windus)

**SEMESTER II**

## 1. Comprehension

## 2. Grammar :

- (a) Nouns, Determiners and Adjectives
- (b) Adverbials
- (c) Various Concepts and Ways in which they are expressed.

(d) Transformation of sentences : (i) Voice, (ii) Reported Speech.

3. Pronunciation of English :

Ability to pronounce words of English with proper stress by consulting a dictionary like the Oxford Advanced Learners' Dictionary of Current English.

4. Written English :

- (a) Precis Writing
- (b) Report Writing

5. Practical Criticism :

Poetry Appreciation.

*Books Prescribed*

For Comprehension, Pronunciation of English and Written English :

*English Through Reading* Vol. II—Bhaskar and Prabhu  
(Macmillan)

*For Grammar :*

1. *English at Home*—W.R. Lee (E.L.B.S.)
2. *English Grammar*—Scott, Bowley et. al. (Heinemann)
3. *Guide to Patterns and Usage in English*—A.S. Hornby (ELBS)

*For Practical Criticism :*

*Poetry and Prose Appreciation*—L.G. Alexander (Orient Longman)

or SYLLABUS II

1. General Linguistics
2. Morphology
3. Grammar
4. Phonetics and Phonology

5. English Language Teaching
6. Practical Criticism—Prose and Poetry and Stylistics

## SEMESTER I

1. General Linguistics
  - (a) Language and Linguistics
  - (b) Levels of Linguistic Description
2. Morphology
  - (a) Morphemes and Allomorphs
  - (b) Prefixes and Suffixes
  - (c) Root and Stem
3. Grammar
  - (a) Traditional Grammar
  - (b) Structural Grammar
  - (c) Later Developments
4. Phonetics and Phonology
  - (a) Organs of Speech
  - (b) Description and Classification of English Sounds
  - (c) Received Pronunciation and Standard Indian English
  - (d) Phonemic Transcription of Words
  - (e) Stress
5. English Language Teaching
  - (a) Second Language Learning
  - (b) Linguistics and Second Language Teaching
6. *Practical Criticism*
  - (a) Appreciation of Prose Texts
  - (b) Appreciation of Poems

### *Books Prescribed*

For General Linguistics, Morphology, Grammar and English Language Teaching :

1. *The Linguistic Sciences and Language Teaching—*  
Halliday, et. al. (Longman)

2. *An Introduction to Descriptive Linguistics*—H.A. Gleason (rev. ed.-Holt, Rinehart and Winston, Inc.)
3. *Theoretical Linguistics*—John Lyons (C.U.P.)
4. *Grammar*—F. Palmer (Pelican)
5. *Second Language Learning*—Paul Christophersen (Penguin)

#### For Phonetics and Phonology

1. *An Introduction to the Pronunciation of English*—A.C. Gimson (E.L.B.S.)
2. *Spoken English for India*—Bansal and Harrison (Orient Longman)

#### For Practical Criticism and Stylistics

1. *Poetry and Prose Appreciation for Overseas Students*—L.G. Alexander (Orient Longman)
2. *Stylistics and the Teaching of Literature*—Henry Widdowson (Longman)

### SEMESTER II

#### 1. General Linguistics

- (a) Language Use.
- (b) Bilingualism.

#### 2. Grammar

- (a) Grammatical Units
- (b) Rankshift/Embedding
- (c) Grammatical Categories
- (d) Deep and Surface Structures

#### 3. Phonetics and Phonology

- (a) Weak forms
- (b) Rhythm and Intonation (the Falling and the Rising Tones)
- (c) Phonological Units : (i) The Phoneme, (ii) Syllable Structure.

4. English Language Teaching :  
Language Teaching Operations : Selection, Grading and Staging, Presentation, and Testing.
5. Practical Criticism : Stylistics : Basic Concepts.

*Books Prescribed*

Same as for Semester I.

5. As regards the Academic Council's resolution regarding the reorientation of various courses with a view to making them employment oriented, the Board noted that already the Higher Proficiency and Spoken English certificate courses and the M.Phil. courses both in Literature and E.L.T. are highly employment-oriented.
6. The Board of Studies in English considered the alternative course in Basic Maths as suggested by the Academic Council and resolved that it be *not* accepted.
7. The Board resolved that a new option called 'English' be permitted to the students of the B.A. Three Year Degree Course. The details of the proposed syllabus shall be considered at the next meeting of the Board. It may be treated as an Additional Option for faculties other than Arts. No candidate shall be permitted to take both English Literature and 'English' as optional subjects. It was further resolved to form a sub-committee consisting of the following members to work out the details of the new option :

Prof. N.M. Sahal  
Mr S.B.L. Rawat  
Mr A.S. Nadan  
Mr R.P. Bhatnagar (Convener)

It could coopt other members.

R.P. Bhatnagar  
Convener  
B.O.S. in English

MINUTES OF THE SPECIAL MEETING OF THE COMMITTEE  
OF COURSES IN LIBRARY SCIENCE AND DOCUMENTA-  
TION HELD ON 7TH MARCH, 1979 AT 12.00 NOON  
IN THE DEPARTMENT OF LIBRARY SCIENCE  
AND DOCUMENTATION, UNIVERSITY OF  
RAJASTHAN, JAIPUR.

Present.

- |                         |                            |
|-------------------------|----------------------------|
| 1. Shri S.N. Srivastava | <i>Convener.</i>           |
| 2. (Miss) U. Bhatnagar  |                            |
| 3. Shri C.L. Sharma     |                            |
| 4. Dr. M.S. Jain        | } <i>Special Invitees.</i> |
| 5. Shri S.P. Sood       |                            |
| 6. (Mrs.) P. Dhyani     |                            |
| 7. Shri P.K. Gupta      |                            |
| 8. Shri P.S. Garg.      |                            |

N.B. Prof. P.B. Mangala and Dr. J.S. Sharma,  
(External Members) did not attend the meeting.

1. The Committee revised Res. Nos. 4 and 5 of its earlier minutes, dated the 29th August, 1978 as follows :—

(i) *Res. No. 4 be substituted by the following :—*

The Committee recommended courses of study & text books in the subject for the following examinations. In view of the importance of the changes in the syllabi and courses, it is specially recommended that the changes suggested be implemented from the examinations of 1980.

1. Certificate Course in Library Science Examination, March 1980 (no change)
2. Bachelor of Library Science and Documentation Examination, 1980 (*Vide Appendix A*).

3. Master of Library Science and Documentation  
Examination, 1980 (*Vide Appendix B*).

(ii) *Res. No. 5 be substituted by the following :-*

The Committee of courses in Library Science resolved that there should be a separate Board of Studies in Library Science and Documentation since there is degree and post-graduate courses in the subject. Necessary amendment to Ordinance 59 may be made.

The meeting terminated with a vote of thanks to the Chair.

Sd/-

(S.N. Srivastava)

*Convener*

(C.O.C. in Library Science)

## APPENDIX-A.

*(Ref. Res. No. 1 (i) (2) of the Minutes)***Bachelor of Library Science.**

Page 2—O.329 K— A candidate for the examination shall be required to offer the following papers :

Paper I	— Comparative Librarianship
Paper II	— Library Management Theory
Paper III	— Documentation and Reference Service
Paper IV	— Library Classification Theory
Paper V	— Library Cataloguing Theory
Paper VI	— Library Management Practical
Paper VII	— Documentation and Reference sources
Paper VIII	— Library Classification Practical
Paper IX	— Library Cataloguing Practical.

Page 3. R. 43 B. Para 1—as it is

Para 2. Each Theory paper shall be of three hours duration and carry marks as shown below against each :

**Theory :**

Paper I	— Comparative Librarianship	100
Paper II	— Library Management	100
Paper III	— Documentation and Reference Service	100
Paper IV	— Library Classification	100
Paper V	— Library Cataloguing	100

**Practical :**

Paper VI	— Library Management		
	Practical Exam	60	75
	Practical Diary	05	
	Viva Voce	10	
Paper VII	— Documentation and Reference sources		
	Practical Exam	60	75
	Practical Diary	05	
	Viva Voce	10	
Paper VIII	— Library Classification		
	Practical Exam	60	75
	Practical Diary	05	
	Viva Voce	10	



Paper IX	—Library Cataloguing		
	Practical Exam.	60	} 75
	Practical Diary	05	
	Viva Voce	10	

*N.B.* The practical examinations in Paper VI, VII, VIII and IX will take place in March/April every year. The paper setting and assessment for examination in each of these practical papers shall be done jointly by an external examiner and internal examiner (s) who is/are teaching the subject.

Page 4—O.329 K-4.

A candidate for the examination shall be required to offer the following papers :

Paper I	—Universe of knowledge : structure and organisation	100
Paper II	—Librarianship : National and International	100
Paper III	—Advanced Documentation and Reprography	100
Paper IV	—Advanced Classification	100
Paper V	—Advanced Cataloguing (T)	100
Paper VI	(a)—Advanced Classification (P)	50
	Practical exam.	40
	Practical Diary	05
	Viva Voce	05
"	(b)—Advanced Cataloguing (P)	50
	Practical Exam.	40
	Practical Diary	05
	Viva voce	05
Paper VII	: One of the following :	100
	(a)—Public Library System	
	(b)—Academic Library System	
	(c)—Scientific and Technical Libraries	
	(d)—Management of Archives	
Paper VIII	: One of the following :	
	(a)—Current problems in Library Science and Documentation—Project report—	100

*Note* : Project Report under Paper VIII shall be type-written and shall be submitted by the candidates in triplicate so as to reach the office of the Registrar not later than three months after their theory and Practical Examinations are over.

(a)—Library Systems Analysis and Design and Elements of Statistical Methods.

## PAPER I Comparative Librarianship

*Max. Marks. 100*

1. Growth and Development of Library Concept, Library in Modern Society.
2. Types of Libraries and their functions.
3. Five Laws and application of Scientific method in Library Science.
4. Library Movement in UK, USA and India.
5. National Library System in UK, USA, USSR and India.
6. Library Legislation : Concept and use, Legislation in UK and India : Copyright Law, Delivery of Book Act.
7. Library Co-operation, Functions of National Library and State Central Library.
8. Extension services and Public Relation Work.
9. Library profession, Library Association, National Lib. Associations in UK, USA and INDIA.
10. Library Education in India.
11. Activities of IFLA, COMLA and DEA of UNESCO

## PAPER II Library Management

*Max. Marks. 100*

1. Concept of management and administration,
2. Principles of Management,
3. Detailed study of the following :
  - (a) Acquisition Section : Policy, sources and work
  - (b) Technical section : Work
  - (c) Circulation Section : Work, and membership

- (d) Reference Section : Policy, work and orientation.
  - (e) Periodical Section : Acquisition, processing etc.
  - (f) Maintenance Section : Guiding, Shelving,
  - (g) Stock rectification and Verification, binding etc.
4. Library authority and Library Committee, Role and Functions.
  5. Library Finance : Budgeting, Accounts, etc.
  6. Library Personnel : Classification, qualification, Job analysis, staff manual.
  7. Library Building : Planning, equipment, furniture and fittings, study of relevant ISI standards.
  8. Annual Report, Library rules, Library Statistics, Display.

### PAPER III Documentation and Reference Service

*Max. Marks : 100*

1. Concept and development of the subject, need and uses.
2. Documentary sources of information : Kinds, variety means of bibliography control.
3. Reference and Documentation services in different types of libraries.
4. Inquiry techniques, and Search Strategy.
5. Referral Service, Fact finding Service.
6. Literature Search, Documentation List, CAS/SIM
7. Language Barrier, Translation Service
8. Reprographic service (Exclusively engineering and technical aspects).
9. Indexing techniques : Alphabetical, alphabeticoclassed, classified, chain, KWIC KWOC Coordinate, indexes.
10. Abstracting, Types : Indicative and informative.
11. Documentation Centres and Agencies (Documentation activities only)

INSDOC  
SSDC

SENDOC  
BARG  
DESIDOC  
NDC of NIHFW  
FID  
NLM ( USA )  
VINITI ( USSR )

#### PAPER IV Library Classification Theory

*Max. Marks. 100*

1. Need for and Purpose of Clasification.
2. Canons for Characteristics and Notation.
3. Class number, its structure and its quality. Class number as an artificial language of ordinal numbers.
4. The Five Fundamental Categories. Basic Class isolate, Focus, Facet analysis, Phase analysis, Common isolates, Principles of Helpful Sequence, Devices in CC and DC.
5. Enumerative and Analytic-Synthetic Classification Postulational Approach to Classification with steps in Systematic Classification.
6. Detailed and comparative study of the basic classification of books and periodicals according to Colon Classification, and Decimal Classification Schemes.
7. Book Classification with the additional canons for it. Book number, Diversification of collections, collection number.

#### PAPER V Library Cataloguing Theory

*Max. Marks.: 100*

1. Need and purpose of Library Catalogue.
2. Types and physical forms of Library Catalogue.
3. Kinds of entries and their functions, parts of entries. Unit Card System.
4. Structure of names and their rendering.
5. Chain Procedure. -Subject heading.
6. Normative principles.
7. Comparative study of Classified Catalogue code with additional rules for Dictionary Catalogue Code and

Anglo-American Cataloguing Rules (North American Text) (Excluding composite works, periodicals, and special materials).

8. Layout of Catalogue Code.
9. Rules for filing (ALA rules to be omitted)
10. Recent development in Cataloguing : A brief introduction to I.S.B.D. (M), ISBD (S), U.B.C., MARC.

#### PAPER VI Library Management Practical

*Max. Marks. : 75*

- (1) Detailed Study of Routines, Records—Prepared, and Forms used in the following procedures :

Select Order Receive	}	Acquisition of Documents
Accession Label Arrange Shelve	}	Processing
Locate Lend Reserve Recall Inter Library Lending	}	Use
Bind Replace Withdraw Registration of members	}	Maintenance

- (2) Preparation of Staff Manual.

#### PAPER VII Documentation and Reference Sources

*Max. Marks. : 75*

- I. Evaluation of selected items in each of the following:-
  1. Sources of bibliographical information.
  2. Trade Bibliographies

3. National Library catalogues
4. National bibliographies
5. Subject bibliographies
6. Universal bibliographies
7. Union lists
8. Indexes and abstracts
9. Sources of words
10. Sources of Statistics
11. Sources of geographical information
12. Sources of biographical information
13. Encyclopaedias
14. Year books and almanacs
15. Directories
16. Other reference sources, e.g. Advances in progress, reports, reviews etc.

II. Location of information from the above sources.

III. Preparation of a documentation list.

#### PAPER VIII Library Classification Practical

*Max. Marks. : 75*

- (I) Classification of documents by Colon Classification (6th Ed. reprint) and Dewey Decimal Classification (18th Edition) Classification of documents having simple, 'compound', and 'complex' Subjects.
- (II) Classification of documents requiring use of 'Common isolates.'

#### PAPER IX Library Cataloguing Practical

*Max. Marks. : 75*

Practical Cataloguing of undermentioned types of documents for a 'Classified Catalogue and a Dictionary Catalogue by using 'Classified Catalogue Code' (Latest Edition with amendments) for the former and the 'Anglo-American Cataloguing Rules' (Latest Edition with revised chapters of North-American Cataloguing Text) alongwith 'Sears List of Subjects Headings' for the latter :—

1. Books involving Personal authorship alongwith Conflict of authorship.
2. Books involving Corporate authorship alongwith Conflict of authorship.
3. Books involving Pseudonymous authors.

4. Anonymous works and works requiring titles as heading.
5. Composite Books.
6. Multivolume books.
7. Periodical publications.

*Note* :— Complicated foreign personal names, complicated periodicals and pseudoseries are to be Omitted.

### PAPER III Documentation and Reference Servic (Books)

Delete paper III Documentation and paper IV Reference Service.

#### *Add Recommended Books :*

1. Bradford (Sc) : Documentation Ed. 2. London, Lockwood.
2. Coblans (H) : New Methods and Techniques for the communication of knowledge. paris, UNESCO, 1957.
3. Pery (JW) and Kent (A) : (Tools for machine Literature searching semantic code dictionary equipment, procedures. New York, Inter Science (1958)
4. Kent (A) : Specialised information Centres, 1965.
5. International Federation : for Documentation : Manual of document reproduction and selection. 3 pts. 1953-1957.
6. Penna (CV) : The planning of Library and Documentation Service. Paris UNESCO, 1970.
7. Kimber (RT) : Automation in Libraries Ed. 2. Oxford Pergamon Press.
8. Ranganathan (SR) : Documentation and its facet, Bombay, Asia, 1964.

9. Shera (JH) and Egan (ME) Ed. : Bibliographic organisation, Chicago, Univ. of Chicago Press, 1956.
10. Collison (RL) : Indexes and Indexing. Ed. 2. London, Benn, 1956.
11. Foskett (DJ) : Information Service in Libraries, London, Lockwood, 1958.
12. Indian Standards Institution : Canons for making Abstracts.
13. Ranganathan (SR) : Documentation, its genesis and development, Delhi, Vikas, 1973.
14. Mukerjee, (AK) : Fundamentals of special Librarianship and Documentation. Calcutta, I aslic. (1969).
15. Ranganathan (SR) : Reference Service. Ed. 2. Bombay, Asia, 196
16. Collison (RL) : Library Assistance to Readers, Ed. 3. London, Dockwood.
17. Hutchins (M) : Introduction to Reference Work. Chicago ALA, 1944.
18. Mukerjee (AK) : Reference Works and its Tools, Calcutta, World Press, 1964.
19. Foskett (DJ) : Readers' Advisory Service.
20. Wyer (JI) : Reference Work.
21. Winchell (CM) : Guide to Reference Books Ed. 8. Chicago, A.L.A. (With supplements)
22. Shores (Louis) : Basic Reference Sources. Chicago. A.L.A. 1954.



23. Wafford (AJ) : Guide to Reference Material. London, Lib. Assn. 1956.
24. Murphy (RW) : How and where to look it up; A Guide to Standard Sources of Information. N.M., Mc-Graw Hill, 1958.
-

## APPENDIX-B

(*Ref. Res. No. 1 (i) (3) of the minutes*)

### Master of Library Science and Documentation

#### PAPER I—Universe of Knowledge : Structure and Organisation

Replace the existing provision with the following :—

1. Objectives of the study of universe of knowledge : Its structure and organisation in Library Science. Attributes of Knowledge. Growth of knowledge and the modes of formation of knowledge, and subjects. Various systems of organisation of knowledge and universe of knowledge as mapped in various schemes of classification.
2. Religion, Philosophy and Science : Their Contribution to knowledge.
3. Positivistic, speculative and authority centres modes of thinking.
4. Methods of Research of Natural Sciences, Social Sciences and the humanities. Different stages of scientific inquiry observation, classification, hypothesis, verification, induction deduction, theories and laws.
5. Development of Scholarship since the 17th Century.
6. Knowledge and society.
7. Agencies for the dissemination of knowledge and information.
8. Research-Fundamental, Applied and Developmental, Organisation of research with special reference to India.

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#### PAPER IV Advanced Classification (Theory)

Add Para 1

Normative principles of bliss, Brown Richardson, Sayers and Ranganathan—Comparative Study.

Standards for the elements needed in the design of classification scheme.

Number subsequent paragraphs accordingly.

**PAPER VIII (a) Current Problems in Library Science and Documentation Project Report**  
( Replace the existing provision by the following )

The topic shall be finalised in consultation with teacher-guide.

The report will deal with the internal organisation of the subject and attempt a critical review of the literature on the subject. Alternatively, depending upon the subject, the report may embody the results of the field investigation done by the student.

The report submitted shall not be of more than 150 pages in length.

**PAPER VIII (b) Library Systems Analysis and Design and Elements of Statistical Methods**

The paper will consist of two parts. A candidate shall have to attempt two questions at least from each part.

**PART A Library System Analysis and Design**

Basic Concepts

Role of System Analysis

Planning and conducting a system study.

System description

System analysis

System design

System implementation.

**PART B Elements of Statistical Methods.**

Nature, scope and limitations of statistics

Data : Primary and Secondary

Collection of Data : Sources and Methods

Presentation of Data : Tables, graphs and diagrams, Elementary Statistical Analysis.

Ratios

Averages,

Variation

Elements of time series

Correlation

Elements of Sampling  
Bibliometry.

PAPER VIII (B) Library Systems Analysis and Design and  
Elements of Statistical Methods.

*Recommended Books :*

Library Systems Analysis and Design.

1. Bingham (JE). Hand book of Systems Analysis, 1972.
2. Burkhalter (BR) Case Studies in Systems Analysis in a University Library. Methucherr, N.J. Scare Crow, 1968.
3. Byrne (B) and others : Practical System Analysis, 1969.
4. Chandor (A) and others. Practical System Analysis. 1969.
5. Chapman (EA) and others. Library System Analysis Guidelines, New York, Willey Inter Science, 1970.
6. Chen (Ching Chih) : Applications of Operations Research models to Libraries : a case study of the use of monographs, 1976.
7. Condom (RJ) Data Processing System Analysis and Design. 1975.
8. Dougherty (HM) and Heinritz (FJ). Scientific Management of Library Operations. (1966).
9. Eldin (HK) and Croft (FM). Information System, a Management Science Approach (1974).
10. Fitzgerald (JM) and Fitzgerald (AI) Fundamentals of Systems Analysis. New York, Wiley (1973).
11. Gleim (GA) Programme Flow Charting (1970)
12. Kirk (FG). Total system development for information system (1970).
13. Lec. (SH). Planning programme budgeting system (PPBS) Implications for Library Management (1973)
14. Meadow (CT) Analysis of information Systems. Ed.2 (1973).

15. Morse (PM) Library effectiveness, a system approach (1968).
  16. Neuschel (RF). Management by Systems. Ed.2 New York, Mc Graw Hill (1960).
  17. Rother (YB) and Mailally (A) Practice of Systems Analysis Manuals 1-7 (1970).
  18. ....and others, Art of Systems Analysis (1969).
  19. Vickery (BC) Information Systems, London, Butter Worth (1973).
  20. Thomas (PA) Task Analysis of Library Operations. London Aslib. (1971).
  21. Gupta (CB) Introduction to Statistical Methods. Ed. 3 Agra, Ram Prasad, 1964.
  22. Gupta (S.P) Statistical Methods. Rev. Ed. 4 Delhi, S Chand. 1972.
  23. Simpson (G) and Kafka (F). Basic Statistics, New York Norton. 1957.
-

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN LAW HELD ON THE 3RD MARCH, 1979 AT 12.00  
NOON IN THE UNIVERSITY OFFICE, JAIPUR.

**Present :**

1. Dr. Mangal Chandra Jain 'Kagzi'      *Convener*
2. Dr. S.N. Dhyan,
3. Shri K.B. Agrawal,
4. Shri N.R. Sharma,
5. Shri S.R. Baj.

Dr. Shiv Dayal and Professor Paras Diwan ( External members ) could not attend the meeting.

1. Under Section 24 E (8) of the University Act, Dr. Mangal Chandra Jain 'Kagzi', Professor of Law, University deptt. of Law Jaipur, *was appointed* Convener of the Board of Studies in Law for the term ending on the 9th August, 1981. Dr. Kagzi thanked the Board for the same.

2. Under Section 34 (4) (iv) of the University Act, Shri N.R. Sharma, Head of the University Deptt, of Law, Jaipur, *was elected* as member other than Convener of the Board of Studies to serve on the Committee for selection of examiners for the year.

Shri K.B. Agrawal proposed the name of Shri N.R. Sharma, Head of the University Department of Law, Jaipur. Before his name was seconded by any member Professor Kagzi on a point of information wanted Shri Agrawal to inform the members if Shri Sharma had given his consent to his candidature. Professor Kagzi explained himself to say that perhaps Shri Sharma might not like to offer himself for membership of the Committee for Selection of Examiners in view of the fact that his three sons would be appearing in certain Law Examinations.

Shri Sharma was of the view that his candidature would not be improper in view of certain past presedents. In view of this, and in absence of any other name Shri Sharma was elected a member other than Convener of the Board of Studies to serve on the Committee for selection of Examiners for the year under Section 34(4) (iv) of the University Act.

3. Since no panel of Examiner's exists and no statements of qualifications and teaching experience etc. of the teachers was received from the University teaching Department, University Colleges, affiliated institutions for inclusion in the panel of examiners, the Board could not scurtinize the same.

4. The Board *offered no comments* on the reports of examiners and question papers set for the examinations of 1978.

5. The Board considered Courses of study and text books in the subject for the following examinations together with relevant additions and/or alterations in the Regulations and Ordinances and statutes taking into consideration the following :

- (i) Letter dated 22nd December, 1978 received from Shri M.P. Jain, University Lecturer in Law, Jaipur regarding change in syllabus of P.G. Diploma Course in Taxation Laws and Practice, *Vide Appendix-I* and,
- (ii) Note received on 6-1-1979 from the Dean, Faculty of Law suggesting changes in the syllabus of paper I of Diploma in Taxation (*Vide-Appendix-II*).

*Resolved to recommend as follows :—*

1. LL.B.(P)/LL.B.(A) Ist Yr. examination. 1981 No Change.
2. LL.B.(P)/LL.B.(A) Ilyr. Examination 1982—  
No Change.
3. LL.B.(P) Third year Examination, 1983 :—
  - (i) The following leading case be prescribed

in place of the case "Bhalla's v/s M. Gulat Kanwar 1974 RRD 281 prescribed under paper IV of LL.B. Third Year because this case has been over-ruled by the larger bench of the Board of Revenue

4. LL.M. Part I Examination, 1981.—No Change.
5. LL.M. Part II Examination, 1982.—No Change.
6. Diploma in Labour Law, Labour Welfare and Personnel Management Examination, 1981—No Change.
7. Diploma in Legislative Research and Drafting examination, 1981—No. Change.
8. Diploma in Taxation Laws and Practice Examination, 1981 :—

The existing courses of study be amended *vide Appendix-III* and same be made effective w.e.f. the Academic Session 1978-79.

9. Diploma in Criminology and Criminal Administration Examination, 1981- No change.

6. The Board considered a proposal suggesting amendments to the transitory provisions for LL.M. as contained in Ordinance 258 of the University Hand Book Part II.

In this connection, the Board also considered, 'Note' prepared by Professor M.C. Jain 'Kagzi,' Dean, Faculty of Law on the joint representation of the students of the LL.M. class. (*Vide Appendix-IV*).

The Board after discussion at length *resolved to recommend* that O.258 *be amended* as follows so that the failures of the semesters scheme of examination prevalent upto May, 1978, could be allowed to appear at the Annual Scheme Examination considering them ex-students of the Annual Scheme Examination :—



O.258 The following new sub-clause (A) be inserted under the Ordinance 258 of the University Hand Book Part II :—

O.258-A.

Notwithstanding the aforesaid provisions as defined under the foregoing O.258 for the LL.M. Examination, w.e.f. the academic session 1978-79, the following provision shall apply :—

1. The four papers for First and Second Semesters should be deemed to be four papers for the Ist Year of the Annual Scheme. And, four papers of Third and Fourth Semesters should be deemed to be the four papers for the IInd Year under the Annual Scheme.
  2. The success or failure of the Ist and IInd Semesters candidates should be worked out presuming that they took Ist Year (Annual Scheme) Examination, And, similarly, their success or failure in the IIIrd and IVth Semesters should be worked out as though they took IInd Year (Annual Scheme) Examination.
  3. The basis indicated should be adopted for purposes of aggregation of marks, requests for revaluation, promotion to the next higher class and declaration of result and the like.
  7. The Board considered the provisions relating to admission eligibility for the LL.B. First Year Course taking into consideration the note received from Dr. M.C. Jain Kagzi, Dean, Faculty of Law, Jaipur (*Vide Appendix-V*).
- Resolved to recommend that the figure 40% given under Ordinance 252 be replaced by the figure 45%.*
8. The Board considered the note received from Dr. M.C. Jain Kagzi, Dean, Faculty of Law, regarding permitting students

to offer dissertation in lieu of a paper at the LL.M. Part II Examination, 1979 (*Vide Appendix-VI*).

*Resolved to recommend* that the status-quo be maintained.

9. With reference to the Faculty of Law resolution No. 4 (II), dated the 9th December, 1978, the Faculty considered the following proposals made by Shri K.B. Agrawal, Head of the Department of Law, Dungar College, Bikaner, as contained in his letter dated the 12th September, 1977 :—

- (i) Re-Organisation of Courses of LL.M.
- (ii) Revision of leading cases in LL.B.

*Resolved to recommend* that the following Committee be constituted to consider the aforesaid proposals of Shri K.B. Agrawal :—

1. Professor M.C. Jain 'Kagzi,'
2. Professor K.B. Agrawal,
3. Shri S.R. Baj,

The Committee be also authorised to co-opt more members.

10. The Board considered the following letters :—

- (i) Letter No. ST/BC/32/1977 (LE), dated the 15th November 1977 received from the Secretary, Bar Council of India, New Delhi regarding the rule made by the Bar Council of India on double course (*Vide Appendix-VII*).
- (ii) Letter No. LE (Cir) No. 6/1978, dated the 12th June, 1978 received from the Acting Secretary, Bar Council of India, New Delhi, regarding the proposed new pattern of legal education (*Vide Appendix-VIII*).

*Resolved to recommend* that the consideration be postponed for the next meeting.

The meeting ended with a vote of thanks to the chair.

Sd/-  
(M.C. Jain Kagzi)  
Convener.

## APPENDIX-I

(Reference resolution No. 5 of these minutes)

Jaipur, 22nd December, 1978

To,

The Dean,  
University Studies in Law,  
Jaipur.

**Subject :** Change in syllabus of P.G. Diploma Course in Taxation Laws and Practice—to be effective for 1978-79 Session (i.e. 1979 Examination).

Dear Sir,

I suggest the following amendments in the existing Syllabus immediately to be effective for 1979 examination :

(1) *Paper I*

Constitutional Law Problem in Taxation.  
(A general scope and relevant Articles of the Constitution may kindly be mentioned.)

(2) *Paper III*

- I. The name of part I may be changed from "Estate Duty Act, 1961 to Income Tax Act, 1961 (Since it is a misprint).
- II. The Rajasthan Agricultural Income Tax Act may be deleted from the syllabus (since the Act is not in force).

*From the Books recommended :* The book of Mr. Aharwal R.L. on the same subject may also be deleted. These changes may kindly be done immediately and a revised copy of the syllabus may be circulated among the students of Diploma.

With thanks,

Yours Sincerely,  
Sd/-

(M.P. Jain)  
INCHARGE DIPLOMA.

## APPENDIX-II

(Reference resolution No. 5 of these minutes.)

## DIPLOMA IN TAXATION

## PAPER I

## Constitutional Law Problems in Taxation

This paper provides the students instruction in the provisions of the Constitution which deal tax powers of the union and the States, the Union-State revenue distributions, constitutional limitations—general and specific on taxation process. It also provides for a study into the impact of the relevant articulated tax policy formulation embodied in the Directive Principles of State policy. The breakup of the paper is as given below :

- I. Taxation and taxes
  - Fee and tax
  - Compulsory Deposits.
  - Direct-Indirect Taxes.
- II. Law and Taxation
  - Article 265
  - Act or Ordinance :
    - Article 245/Articles 246, 248
    - Relevant entries of the Union List (List-I) and the State List (List II) of the Seventh Schedule to the Constitution.
  - Arts 123-213
    - Union of India V/s. H.S. Dillon
    - Delegated Legislation.
    - .....restrictions.
  - (i) Raj Narain V. Chairman, Patna Administration Committee AIR 195 SC
  - (ii) Shama Rao V. Union Territory of Pondichery A.I.R. 1967 SC 1480
  - Legislation Procedure for Tax Laws :
    - Articles 109, 110, 111, 117, and 118
    - State of Punjab V. Satpal Dang AIR 1967 Sc 903

III. *Distribution of Union Revenues*

Articles 268-279

Finance Commission

Articles 280-282-The Finance Commission (Miscellaneous provisions) Act, 1951.

## IV. Uniform Taxation

Articles 286-Inter State Sales Taxation

The Central Sales Tax Act, 1956.

*Bengal Immunity Co. Ltd. V. State of Bihar.*

A.I.R. 1955 Sc 661

Gwalior Rayons Ltd. V. *Assistant Commissioner*

A.I.R. 1974 SC

Law Commission : Inter-State Sales Tax (Second Report.  
1956).

## V. Inter State Commerce and Taxation Articles 301-304

Automobiles

V. *State of Rajasthan*

(Rajasthan) Ltd.

A.I.R. 1962 SC 1406

Atiabari Tea Co,  
Ltd.V. *State of Assam*

A.I.R. 1961 SC 232

## VI. Immunity of instrumentabilities

Articles 285 and 289

*Jare Sea Customs etc.*

A.I.R. 1963 SC 1760

## READINGS :

Kagzi, M.C.J.

The Constitution of India (3rd ed.  
1975 part II Cha. 7 pp. 333-354.Taxation and Directives Prin-  
ciples (1976) SCJ 11-12Direct-Taxes Enquiry Committee  
(1971) Direct-Tax Laws Commi-  
tee (1978)

Alice Jacob :

The Finance Commission : Its  
Roles in adjustment of Union  
State Finance Relations Con-  
stitutional Developments since  
Independence ILI (1975)

Alice Jacob &  
*S.N. Jain,*

Tax  
Rental Arrangement : Rep-  
lacement of Sales Tax by addi-  
tional Duties of Excise-Indian  
Constitution Trends and Issue-  
ILI (1978)

## APPENDIX-III

(Reference resolution No. 5 of these minutes.)

**Diploma in Taxation Laws and Practice :**

The existing Courses of study be amended as follows :—

*Paper I-Constitutional Law problems in Taxation :—*

This paper provides the students instruction in the provisions of the Constitution which deal tax powers of the union and the States, the Union-State revenue distributions, constitutional limitations—general and specific on taxation process. It also provides for a study into the impact of the relevant articulated tax policy formulation embodied in the Directive Principles of State policy. The breakup of the paper is as given below :

- I. Taxation and taxes
  - Fee and tax
  - Compulsory Deposits.
  - Direct-Indirect Taxes.
- II. Law and Taxation
  - Article 265
  - Act or Ordinance :
  - Article 245/Articles 246, 248
  - Relevant entries of the Union List (List I) and the State List (List II) of the Seventh Schedule to the Constitution.
  - Arts. 123-213
  - Union of India V/ H.S. Dillon
  - Delegated Legislation.
  - .....restrictions.
  - (i) Raj Narain V. Chairman,  
Patna Administration Committee  
AIR 195 SC
  - (ii) Shama Rao V. *Union Territory of Pondichery*  
A.I.R. 1967 SC 1480

*Legislation Procedure for Tax Laws :*

Articles 109, 110, 111, 117, and 118

State of Punjab V. Satpal Dang AIR 1969 Sc 903

III. *Distribution of Union Revenues*

Articles 268-279

Finance Commission

Articles 280-282-The Finance Commission (Miscellaneous provisions) Act, 1951.

#### IV. Uniform Taxation

Articles 286-Inter State Sales Taxation

The Central Sales Tax Act, 1956.

*Bengal Immunity Co. Ltd. V. State of Bihar.*

A.I.R. 1955 Sc 661

Gwalior Rayons Ltd. V. *Assistant Commissioner*

A.I.R. 1974 SC

Law Commission : Inter-State Sales Tax (Second Rept. 1956).

#### V. Inter State Commerce and Taxation Articles 301-304

Automobiles V. *State of Rajasthan*

(Rajasthan) Ltd. A.I.R. 1962 SC 1406

Atiabari Tea Co, V. *State of Assam*

Ltd. A.I.R. 1961 SC. 232

#### VI. Immunity of instrumentabilities

Articles 285 and 289

*Jare Sea Customs etc.*

A.I.R. 1963 SC, 1760

#### Readings :—

1. M.P. Jain : Indian Constitutional Law
2. Basu, D.D. : Indian Constitution.
3. Shrivahi, H.M. : Constitutional Law.
4. Alice Jacob : The Finance Commission : Its Roles in adjustment of Union State Finance Relations Constitutional Developments-since Independence ILI (1975)
5. Alice Jacob & S.N. Jain. : Tax  
: Rental Arrangement : Replacement of Sales Tax by Additional Duties of Excise-Indian Constitution Trends and Issues ILI (1978)



## Paper II. Commercial Law and Accountancy.

- (i) Indian Contract Act, 1892 (Sections 1 to 75 for sixty marks-Section A)
- (ii) Commercial Accounts especially preparation of trial Balance, Profit and Loss Account and Balance Sheet for forty Marks Section B)

*Books Recommended*

- (i) Singhal J.P. : Indian Contract Act (latest edition)
- (ii) Battliboy : Elementary Accounts.

## Paper III. Income Tax Law and Practice.

- (i) Income Tax Act, 1961.

*Books Recommended ;*

- (i) Kanga and Palkhiwala-The Law and Practice of Income Tax.

## Paper IV. Direct Tax Laws.

- (i) Estate Duty Act. 1953.
- (ii) Wealth Tax Act, 1957.
- (iii) Gift Tax Act, 1958.

*Books Recommended :*

- (i) Shiv Gopal -Commentaries on Estate Duty Act, 1958.
- (ii) Kaushal, S.C.-Commentaries on the Gift Tax act, 1958.
- (iii) Aewitt H.W.-Green's Death Duties.
- (iv) Ayyangar, Sample, The Three New Taxes.

## Paper V. Indirect Tax Laws.

- (i) The Central Sales Tax Act, 1956.
- (ii) The Rajasthan Sales Tax Act, 1954.
- (iii) Customs Act.

*Books Recommended :*

- (i) Agrawala, S.K. : Central Sales Tax Act, 1956.
- (ii) Inter State Trade Barries and Sales Tax Laws

in India, Published by Indian Law Institute, New Delhi.

- (iii) Tripathi, N.M. : Central Sales Tax Act. by R.B. Patel (1966 Ed).
- (iv) Jain, Jai Kumar-Law of Sales and purchase-Taxes in Rajasthan, : published by Anand Prakashan.
- (v) Commercial Taxation Manual, published by the Government of Rajasthan.
- (vi) Rajasthan Excise Manual, published by Rajasthan Government.

#### Paper VI. Dissertation.

The candidate is to take a problem, make its analysis to write the solutions of law and his own views. Each student will be assigned a particular problem on which he will be required to collect information and write a paper. The paper will be evaluated by a committee consisting of two persons to be appointed by the University. one of whom will be the supervisor.

*Note :* Candidates are required to submit their Dissertation not later than 15th April of the year in which they are appearing at the Examination.

## APPENDIX-IV

(Reference Resolution No. 6 of these minutes)

Copy of Note prepared by Dr. M.C. Jain 'Kagzi'

Re : LL.M. Students representation :

It has been brought to my notice that certain representations have been made by students of LL.M. class who hitherto were under the Semester Scheme adopted for LL.M. Course 1974, and thereafter discontinued with inordinate haste in 1976. The discontinuance of this Scheme and reintroduction of the Annual Scheme has entailed certain difficulties. In order to resolve such difficulties transitional provisions were made in Ordinance 258. Under these transitional provisions for switching over to the annual scheme the ex-students of the Semester Scheme could have the advantage of examination under that scheme for two years. The last examination under that scheme was, therefore, held in August, 1978, Thereafter no examination will be held under that scheme.

Under the transitional provisions of the said ordinance candidates who did not appear, or else who have unable to pass in the failing papers of the Ist and IInd Semester even in the last examination of August, 1978 under that scheme are required to appear in all the papers of the LL.M. part I Examination (Annual Scheme) in subsequent years. Similar machinery provisions are made with respect to candidates of 3rd and 4th Semesters. The latter are, so to say, required to take LL.M. part II papers.

The actual implementation of these transitional provision seems to give rise to certain difficulties as raised in the representations referred above. These alleged difficulties should be resolved, in the absence of any guide lines in the said Ordinance on some rational basis. Any *ad-hoc* solutions in this respect must be avoided, because, they may give rise to grounds for complaint. Considering the difficulties raised before me and after discussions held with certain officers of the Examination Branch, I feel that the guide-lines and norms may be laid down for uniform application in cases that may come up for disposal. These can be as follows :

1. The four papers for First and Second Semester should be deemed to be four papers for the 1st year of

the Annual Scheme. And, four papers of third and fourth Semesters should be deemed to be the four papers for the 2nd Year under the Annual Scheme.

2. The success or failure of the 1st and 2nd Semesters candidates should be worked out presuming that they took 1st year (Annual Scheme) Examination. and, similarly, their success or failure in the 3rd and Fourth Semesters should be worked out as though they were 2nd Year (Annual Scheme) Examination.
3. The basis indicated should be adopted for purposes of aggregation of marks, requests for revaluation promotion to the next higher class and declaration of result and the like.

The above basis to the extent was also suggested by me in respect of a representation of the LL.M. candidates in respect of carry forward facility being given to the candidates who took examination under Semester and Annual Schemes in August, 1978.

*Dean*

## APPENDIX-V

(Reference Resolution No. 7 of these minutes)

(Copy of Note prepared by Dr. M.C.Jain 'Kagzi')

## Ordinance-252

Last year a serious difficulty was caused, because, there was no eligibility qualification of minimum marks percentage in the qualifying degree examinations for purpose of admission to LL.B. 1st Year was insisted. Indeed it was left to be noted by the Chancellor's Committee for Law college to admission to remarks that there has been no such eligibility requirement for a number of years. This deplorable condition existed, although Ordinance 252 of the University mentions that for seeking admission to LL.M. First Year Course a candidate should have 'Secured a minimum of 48% marks in aggregate marks prescribed for the Examination for the.....degree', This eligibility condition for admission seems to have observed in its breach year after year. The said Chancellor's Committee observed as follows :

"On this point, Ordinance 252.....read with Ordinance 81-III (C) lays down a clear rule, namely, the those who have secured a minimum of 40% marks in the qualifying examination shall be eligible for being considered for admission in the 1st year LL.B. Course. This fact has also been specified in the rules of admission printed by the University in their prospectus for the year 1978-79 (Page 20). This percentage of 40% accords with the rules promulgated in this behalf by the Bar Council of India.

The scheme of admission as envisaged in rules contained in pages 19.27 of the prospectus for the year 1978-79 is that (a) every candidate will be required to possess at least the minimum prescribed marks, (b) that the possession of the minimum prescribed marks.....is no guarantee for admission, (c) a list of priority based on merit shall be prepared on the basis of percentage of marks.....,and (d) the admissions shall be granted in accordance with such priority list with reference to the number of seats available.....

This is undoubtedly a very clear, specific and uncontroversial guide. This misfortune, however has been that these rules were not followed....."

It is obvious that the eligibility of 48% marks has been lowered to 40% over these years, notwithstanding Ordinance 252 Experience, may opinion of those concerned with planning and restructuring of legal education unmistakingly pointed out that 40% eligibility is too low to be permitted. The Law Panel of the UGC recently recommended inflexible the minimum of 45% for purposes of eligibility.

*DEAN*

## APPENDIX-VI

(Reference Resolution No. 8 of these minutes)

Copy of Note received from Dr. M.C. Jain Kagzi'

Ref : LL.M. Students' representation :

A number of students have represented to me, thereby drawn my attention to the Regulation 22 (Hand Book Part II Volume II p. 674). They have said in their joint representation that they should be permitted to offer dissertations in lieu of a paper at the next LL.M. Part II examination.

The provision of the said Regulation provide for giving such facility of submission of desseration, subject to certain conditions set out there in. A candidate requesting for it can be permitted to offer a dissertation in lieu of a paper by the Vice-Chancellor at his discretion. If so permitted the candidate can be required to work on an approved topic under guidance of a teacher, and can submit his dissertation in triplicate at least 30 days before the commencement of the LL.M. PART II Exam.

Considering the joint representation of the candidate, I feel that they may permitted to submit dissertation in lieu of a paper indicated by them. They must, however, be required to indicate the paper in place of which they propose to submit dissertations at the time of making their -requests in this matter. Each one of them must indicate categorically the paper in lieu of which he proposes to submit his dissertation. This arrangement will be thereafter deemed irrevocable in his case and he shall not have any option to effect any alteration in the arrangement at any time later.

If the Vice-Chancellor is pleased to accept the above recommendation, I submit that a general order in respect may be made at his earliest convenience to enable the candidates to plan out their studies and work on the topics approved in this behalf.

Dean

## APPENDIX-VII

( *Ref. Res. No. 10 (i) of these minutes* ).

## THE BAR COUNCIL OF INDIA.

ST/BC/32/1977 (LE)

New Delhi-1

Dated 15th November, 1977

From,

The Acting Secretary,  
The Bar Council of India,  
AB/21, Mathura Road,  
Facing Supreme Court Building,  
New Delhi-110001.

To,

1. The Secretaries of all State Bar Councils in India.
2. The Registrars of all the Universities in India.
3. Deans of all the Law Faculties in India.

*Subjects* : Rule made by the Bar Council of India on Double Course.

Sirs,

I am to communicate to you the following Resolution passed by the Council on Double Course :—

*Resolution No. 72/1977*

RESOLVED that the following clause (d) be added in Rule 1 (1) in part IV :

“(d). That the law degree has been obtained without undergoing any other course of instruction simultaneously during the period of three years of study in Law.

Provided that this rule shall not apply to those students who are already undergoing-double courses of studies in any university before 1.1.1978.”

2. I am also giving hereunder another Resolution passed by the Council relating to Double Course :—



*Resolution No. 79/1977*

*Resolved* that the council is of the view that the restriction as to Double course applies to professional courses like Chartered Accountancy.

Sd/-

*Acting Secretary*

The Bar Council of India.

## APPENDIX-VIII

(Ref. Res. No. 10 (ii) of these minutes)

## THE BAR COUNCIL OF INDIA.

Ref. : LE (Cir) No. 6 /1978 Dated 12th June, 1978.

From : Acting Secretary,  
 Bar Council of India, ( IMPORTANT )  
 AB/21, Mathura Road, ( URGENT )  
 Opp. Supreme Court Bldg.,  
 New Delhi-110001.

- To : 1. The Registrars of all the Universities in India imparting legal education.  
 2. The Secretaries of all the State Bar Councils.  
 3. The Secretary, University Grants Commission, New Delhi.

Sub : *The proposed new pattern of legal education.*

Sir,

The communication is addressed to the Universities, and State Bar Councils in accordance with Section 7 (h) of the Advocates Act, 1961 which is as follows :—

“7. The functions of the Bar Council of India shall be-

- (a) .....
- (b) .....
- (c) .....
- (d) .....
- (e) .....
- (f) .....
- (g) .....
- (h) to promote legal education and to lay down standards of such education in consultation with the Universities in India imparting such education and the State Bar Councils.”

I have been directed by the Bar Council of India to communicate to you the following resolution of the Council with reference to the proposed new pattern of legal education :—

*"Resolution No. 84/1978*

The Bar Council of India having considered the possibility of a change over to 10+2 before graduation makes the following recommendations relating to a course of study in law for professional purposes :—

1. Where 10+2 exists or comes into existence, then the law course shall be of the duration of four years.
2. If a student wishes to take up study of law for professional purposes after graduation, then the law degree course for professional purposes shall be of a minimum duration of three years.

(The Council decided that before finalising this Scheme, the recommendations of this Council be sent to the State Bar Councils, the Universities and the University Grants Commission for their views and Comments)"

I shall be thankful if you could kindly send the views and comments on the proposed changes envisaged under the above resolution for consideration by the Council. This matter may be given top priority and the views/comments may please be expedited.

Yours faithfully,  
Sd/-  
(S.M. Srivastava)  
Acting Secretary.

*Copy for Information to :—*

1. The Deans of the Faculties of Law of all Universities imparting Legal Education.
2. Principals of all Law Colleges in India.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN ENGINEERING AND TECHNOLOGY HELD ON 7TH  
MARCH, 1979 AT 12.00 NOON AND 8TH MARCH,  
1979 AT 2.00 P.M. IN THE UNIVERSITY OFFICE,  
JAIPUR.

Present :

1. Dr. R.S. Saxena, *Convener,*
2. Prof. B. Ravindranath
3. Prof. M.M. Dandekar
4. Dr. K.S. Shah
5. Shri G.R. Rao
6. Shri C.L. Arora
7. Dr. K.C. Gupta
8. Dr. S.C. Sharda
9. Dr. M.K. Bhargava,
10. Shri Rama Kant, *External Member*  
Shri Shiv Kumar Gupta, *Student-Invitee.*

N.B. : (i) Shri V.D. Mathur, External-Member could not attend the meeting,

(ii) Shri Rama Kant, External-Member and Shri Shiv Kumar Gupta, Student-Invitee were present only on the 7th March, 1979.

(1) Under clause (8) of Sec. 24-E of the University Act, Dr. R.S. Saxena has been *elected* as Convener of the Board of Studies in Engineering and Technology for the term ending on the 30th June, 1981.

(2) Under Sec. 34 (4)(iv) of the University Act, Prof. M.M. Dandekar, Professor and Head of the Department of Civil Engineering, M.R.E. College, Jaipur was *elected* as member other than the Convener of the Board of Studies in Engineering

and Technology to serve on the Committee for selection of Examiners for the year.

(3) The Board could not scrutinise the statement of qualifications and teaching experience etc. of teachers received from affiliated institutions and the other Universities for inclusion in the revised panel of examiners since the same was not with the office.

The Board *resolved* that the panel of examiners be sent by the University to the Convener, Board of Studies in Engineering and Technology to bring the names and addresses upto date.

(4) The reports of the examiners for the examination held in 1978 were placed directly on the table of the House and the Members did not have an opportunity of studying them in depth. The Board *resolved* that these reports be forwarded to the Convener, Board of Studies in Engineering and Technology for circulation among the internal members of the Board of Studies so that they could take necessary action in respect of the various comments made by the examiners.

(5) The Board *recommended no change* in the courses of Study and text books for the following examinations together with relevant additions and/or alterations to the Regulations, Ordinances and Statutes, if any :—

*I-B.E. Examination :—*

1. B.E. First Semester Examination of November/December, 1981,
2. B.E. Second Semester Examination of April/May, 1982,
3. B.E. Third Semester Examination of November/December, 1981,
4. B.E. Fourth Semester Examination of April/May, 1982,

5. B.E. Fifth Semester Examination of November/December, 1981,
6. B.E. Sixth Semester Examination of April/May, 1982,
7. B.E. Seventh Semester Examination of November/December, 1981,
8. B.E. Eighth Semester Examination of April/May, 1982,
9. B.E. Ninth Semester Examination of November/December, 1981,
10. B.E. Tenth Semester Examination of April/May, 1982.

*II-M.E. Examination :*

1. First Semester Examination of Oct./Nov., 1981
2. Second Semester Examination of April/May, 1982
3. Third Semester Examination of Oct./Nov., 1981
4. Fourth Semester Examination of April/May, 1982
5. Fifth Semester Examination of Oct./Nov., 1981
6. Sixth Semester Examination of April/May, 1982.

**III—Post-graduate Diploma in Irrigation and Hydrology, Examination 1981**

In this connection, the Board placed on record the following :—

- (i) As a general rule the Board of Studies felt that whenever a syllabus is submitted for its consideration a list of suggested books relevant to the subject should also be included. This is very essential in case of the B.E. Examinations where the depth of course can not be assessed easily by a mere study of the syllabus alone. As far as the M.E. Examinations are concerned it is understood that the text books as such may not be available for the different subjects;

but even here as far as possible suggested reading should be included.

- (ii) It was noticed that the existing booklet on the Ordinances, scheme etc. for the B.E. Course of the University of Rajasthan has many mistakes, which need to be corrected. The Board also felt that there seems to be some lapse in the manuscript on account of which the courses of study which are being covered in the college are at divergence from the course printed in the syllabus.

*Resolved that* the Principal, M.R.E. College, Jaipur, may get the errata slip prepared and send the same to the Registrar, University of Rajasthan, for issuing a corrigenda to the syllabus so that the courses of study for the examinations of 1979 are correctly covered by the students.

- (iii) As regards the University booklet dealing with the M.E. courses it was pointed out that at page 60 it is printed that for the paper entitled (1) Non-conventional Methods of Power Generation, and (2) EHV Transmission including HVDC Transmission the syllabus would be announced later. The syllabus prepared by the Department of Electrical Engineering, M.R.E. College for the above two subjects were laid on the table and the Board of Studies gives its approval for the same and recommends their inclusion in the booklet for M.E. in Electrical Engineering as the prescribed syllabus. The above syllabuses are given in *Appendices I and II*.

- (iv) The Board *resolved to recommend that* the portion "Transform Calculus" of Paper-V (Mathematics VII-M) prescribed for the VI Semester (Mechanical Branch) Examination be deleted and it be implemented with effect from the Examinations of 1981.

(6) The Board considered the recommendations made by the sub-committee appointed by the Board of Studies in Engineering and Technology vide its Res. No. 4 (i) dated the 25th August, 1977 at its meeting held on the 9th Sept., 1978 (*Vide Appendix III*).

*Resolved to recommend that* the recommendations made by the aforesaid Committee on complete restructuring of the under-graduate programme was referred to the following Committee for studying in depth and preparing detailed recommendations to be discussed at the next meeting of the Board of Studies :

1. Prof. B. Ravindranath, *Covnener,*
2. Shri Rama Kant, I.A.S., *External-Member*
3. Shri G.R. Rao
4. Dr. K.C. Gupta
5. Dr. S.C. Sharda
6. Shri Sandip Nyati, IV B.E. (Elect.) *Student-Member*
7. Shri Sukumar Daniel, III B.E. (Mech.) *Student-Member,*

(7) The Board Considered the recommendations made by the Committee appointed by the B.O.S. in Engg. and Tech. vide its. res. no. 4 (12) dated 25th Aug., 1977 at its meeting held on the———regarding changes in M.E. (Civil) Courses. (*Vide Appendix IV*).

*Resolved to recommend that* the report of the Committee for changes in M.E. (Civil Engineering) course was available to the University sometime in the month of December, 1978 but unfortunately it was not circulated to the members of the Board of Studies. Consequently it was felt that sufficient study of the proposals could not be made by the members. The Board, therefore, suggested that the proposed programme of revised M.E. Civil Engg. course be circulated to all the members of the Board of Studies so that a decision in this respect could be taken at the next meeting.



(8) The Board considered letter dated the 11th Sept., 1978 of Dr. S.C. Sharda, Reader in Structural Engg., M.R.E. College, Jaipur, regarding change of nomenclature of certizin subjects duly forwarded by the Principal, M.R.E. College, Jaipur vide letter No. F. 4 (N) 4 Acdm/M.R.E.C. 77/15521 dated the 19th Sept., 1978 (*Vide Appendix V*)

*Resolved to recommend that* the suggestions made by Dr. S.C. Sharda in respect of change of nomenclature be accepted. Accordingly the subject now called 'Soil Mechanics' and taught at IV B.E. Civil Engg. level will hereafter be designated as 'Soil and Foundation Engineering-I' and the subject now called 'Foundation Engineering' taught at V Year Civil. Engg. level should be designated as Soil and Foundation Engg. II.

(9) The Board considered letter dated the 13th Sept., 1978 of Dr. S.C. Sharda, Reader in Structural Engg. M.R.E. College, Jaipur regarding remuneration for M.E. Examination work duly forwarded by the Principal M.R.E. College, Jaipur vide letter No. F. 4 (N) 4/Acdm/M.R.E.C./77/15521, dated the 19th Sept., 1978 (*Vide Appendix VI*).

*Resolved to recommend that* a Committee consisting of the following persons be appointed to study the cases of both B.E. and M.E. remuneration patterns and made suitable suggestions because there are several anomalies about the remuneration at the Post-Graduate and Under-Graduate level :

1. Dr. K.S. Shah,      *Convener,*
2. Shri C.L. Arora
3. Dr. S.C. Sharda

(10) The Board considered the note submitted by the Professor and Head of the Department of Mechanical Engineering, M.R.E. College, Jaipur regarding changes in the syllabus of Roto Machine-II of VIII Semester Mechanical duly forwarded by the principal vide his letter No. F 4 (N) 7/Acdm/MREC/76/17203, dated the 10th November, 1978 (*Vide Appendix VII*).

In this connection the Board also considered the letter circulated by Dr. V. Srinivasan, Professor of Mechanical Engineering, M.R.E. College, and an Ex-Member of the Former Board of Studies.

*Resolved to recommend that* the syllabus of Roto Machine II be suitably redrafted so that students may find the required material in the books which are readily available. The revised syllabus may be made applicable to the students in the session 1980-81. In the meantime it is suggested that while teaching this subject extensive reference of chapters and page covering the various topics of the syllabus should be given to the students by the teachers concerned. These references should be from such books which are readily available either in the book-bank or in the general loan section of the M.R.E.C., Library.

(11) The Board noted that :

- (i) The Board of Studies in Engineering and Technology vide its resolution No. 4 (8) dated the 25th August, 1977 recommended that a camp should be organised for Electrical and Mechanical Engineering students on the lines of the Metallurgical Engineering Camp.
- (ii) The Faculty of Engg. and Tech. vide its Resolution No. 4 (iii) (b) dated the 6th April, 1978 resolved to recommend as under :

“The suggestions incorporated in Para 8 regarding the starting of a camp for the Electrical and Mechanical Engg. Students was discussed by the Faculty. Since no recommendations regarding the duration of the camp, the number of marks to be awarded for this, the changes if any needed in the aggregate of marks are given in the recommendation of the Board, it is resolved to refer the matter back to the Board to Studies for reconsideration.”

Accordingly, the Board re-considered the matter in the light of the aforesaid resolution of the Faculty and *resolved to recommend* that the question of making a camp compulsory for the students of Electrical Engg. and Mechanical Engg. was referred to the next meeting of the Board of Studies. In the meantime, the details of this proposed camp be worked out by the Principal, M.R.E. College, Jaipur in consultation with the teachers and the students of Electrical and Mechanical Engineering branches of M.R.E. Colleges.

(12) The Board noted that :

- (i) The Board of Studies in Engg. and Tech. modified the syllabus of M.E. (Met.) vide its Res. No. 4 (ii) dated the 25th August, 1977.
- (ii) The faculty of Engg. and Tech. while considering the aforesaid recommendation of the Board of Studies recommended (vide its Res. No. 4 (iii) (c) dt. 6th April, 1978) as under :—

“In respect of para 11 regarding a few modifications in the M.E. (Met.) Course, the Faculty carefully considered the question and decided to refer the entire proposal incorporated in Appendix ‘F’ of the minutes of the Board back to the B.O.S. for reconsideration. The Faculty felt that the number of contact hours in this course varying from 33 to 35 per week is inconsistent with the earlier stand making the under-graduate contact hours 30 per week-only. Further the Faculty noted that the present course does not incorporate some of the core subjects recommended by the Post-graduate Committee (Thacker Committee) like Instrumentation, Materials Technology, etc. The B.O.S. is requested to re-examine the entire scheme in the light of the above recommendations”.

Accordingly, the Board revised the syllabus for M.E. Met. Course in the light of the recommendations of the Faculty for implementation. The details of this revised course are given in (*Appendix VIII*).

(13) With reference to the Resolution No. 6 of the Faculty of Engg. and Tech. dated the 6th April, 1978 the Board considered letter No. P.M.E.C./Mech./23/77/44390 dated the 30th August, 1977 received from Dr. K.S. Shah, Prof. and Head of the Deptt. of Mech. Engg. regarding the various suggestions in respect of B.E. and M.E. Examinations (*Vide Appendix IX*).

*Resolved to recommend that the withdrawal of parts I and II of the suggestions moved by the Proposer (Dr. K.S. Shah) in the meeting itself be allowed and remaining parts III, IV and V of the suggestions of Dr. K.S. Shah be approved.*

(14) The Board noted that the Faculty of Engineering and Technology while considering the letter No. PCE/MREC/18/77/13096, dated the 28th July 1977 received from Prof. M.M. Dandekar, Professor and Head of the Deptt. of Civil Engg., M.R.E. College, Jaipur has resolved (vide its Res. No. 7 dated the 6th April, 1978) that the suggestions regarding the marks for Practical Training at the end of VI and VII Semesters be credited to VII and IX Semester aggregates respectively be accepted and further desired that the Board of Studies in Engg. and Tech. may now make suitable changes in the Examination Scheme for implementation with effect from 1980-81.

Accordingly, the Board *resolved to recommend that* the suggestions regarding the marks for practical training was considered and it was generally agreed that the present scheme is coming in the way of the results being declared quickly. It is, therefore, suggested that instead of grading the practical training marks at the VI, VIII and X Semesters individually the same will be awarded at the end of X Semester. However, in order not to disturb the balance of weightage the marks for the practical

training at the end of X Semester will have three columns. The First for the training at the end of VI Semester having a weightage of 30 marks; second column for the training taken at the end of VIII Semester having a weightage of 80 marks and the third column for the training taken at the end of X Semester with a weightage of 100 marks. There will therefore be no entry of the marks for the practical training report in the statement of marks for VI and VIII Semesters.

(15) The Board considered letter No. BTE/General/F. 7-11/77 dated nil received from the Registrar, Board of Technical Education, Rajasthan, Jodhpur regarding recognition of the Diplomas awarded by the Board of Technical Education, Rajasthan, as equivalent to degree only forwarded by the Acting Principal, M.R.E. College, Jaipur vide letter No. F. 4. N(7) Admn./M.R.E.C./76/17847 dated the 21st Nove., 1978 (*Vide Appendix X*).

*Resolved to recommend that* the letter of the Registrar, Board of Technical Education for recognising the Diplomas awarded by the Board of Technical Education as equivalent to 3 year degree of the University in Science stream be placed before the various Boards of Studies in the Faculty of Science, Since there is no Three Year Degree in Science being run under the Faculty of Engineering.

(16) The Board considered the following proposals made by Shri Shiv Kumar Gupta (Student Invitee) duly forwarded by the Principal, M.R.E. College, Jaipur, as contained in his letters dated the (i) 2nd March, 1979 and (ii) 3rd March, 1979 ;

- (i) Resolved that the present IX and X Semester courses in Civil, Electrical, Mechanical and Metallurgical Engineering branches be combined together and one terminal examination be held on the completion of the combined teaching programme. There shall be six papers for theory examination. The rest of the two subject remaining in the Semesters IX and X

be considered as sessionals only and be assessed on the basis of purely internal evaluation.

- (ii) *Resolved that* the attendance for this academic year 1978-79 should be made optional in both theory and sessional papers.

*Resolved to recommend* as follows :—

- (i) Item No. 1 of his proposal viz. that the final B.E. Examination for this year should be held at one point after completing the teaching programme of IX and X Semesters, was accepted by the Board. In respect of his further suggestion that in the above examination there should be six theory papers and two papers to be assessed purely by internal evaluation, the Board recommends that this is not a desirable thing to implement. However, considering the various aspects of the problem presented by the students-invitee, the Board agreed as a very special case to recommend that at this proposed examination for IX and X semesters taken together, there shall be 7 theory papers and one paper for internal assessment as a sessional. The following papers in each of the branches may be considered for evaluation based on internal assessment as a sessional :

Civil Engg : Engineering Economics  
 Elect. Engg : Commissioning of Electrical Plant,  
 Mech. Engg. : Numerical Methods in Mechanical Engg.  
 Mett. Engg. : Industrial Metallurgy.

It is seen that except for this change in the type of examination in respect of one paper only, there is no other change either in the total marks or of the distribution of marks or of the relative weightages between theory and practicals.

- (ii) Regarding proposal No. (ii) about making the attendance optional the Board recommended that the case

may be examined by the Principal, M.R.E. College, Jaipur, and he may approach the University for an administrative order in respect of shortage of attendance, if any.

(17) (i) The problem of conducting the examinations for I to IV Year classes was taken up together with the annualization of the existing semester scheme. As the first problem was of immediate consequence the Board resolved to recommend the following action :

There shall be one examination at the end of the odd and Even semesters taken together, i.e. in this academic year there will be no examination at the end of odd semesters. The teaching work of the even semesters will start immediately after the teaching of the odd semesters is completed, Examination will be conducted after the even semester teaching is also over. For this purpose the Board makes the following recommendations :

#### *I.B.E. Examination*

1. Maths. I and Maths III combined	3 hours 100 marks
2. Maths. II	3 hours 100 marks
3. Chemistry I	3 hours 100 marks
4. Physics I	3 hours 100 marks
5. Engl. I and Engl. II combined.	3 hours 100 marks
6. Chemistry II	3 hours 100 marks
7. Physics II	3 hours 100 marks
8. Mathematics IV	3 hours 100 marks

*Note :* There will thus be 8 theory papers and there is no change in the total number of marks.

#### *II. B.E. Examination*

1. Maths. V	3 hours 100 marks
2. Engg. Chem. I and Engg. Chem. II combined	3 hours 100 marks

- |   |                   |
|---|-------------------|
| 3. Engg. Physics I and Engg. Physics II combined.   | 3 hours 100 marks |
| 4. Elect. Engg. I                                   | 3 hours 100 marks |
| 5. Basic Electronics.                               | 3 hours 100 marks |
| 6. Mech. Engg. I and II combined                    | 3 hours 100 marks |
| 7. Mach. Drawing II and Practical Geometry combined | 4 hours 100 marks |
| 8. Maths. VI  | 3 hours 100 marks |

*Note :* The time for the combined paper in machine drawing and practical geometry is 4 hours and it shall be set in two sections separately. There is no change the in total marks.

### III B.E. Examination

If even and odd semesters are combined, there will normally be 10 theory papers in every branch of engineering for this class. The Board recommends that on the pattern of what was already decided for the Final Year classes at Item No. 16 (i) above, one of the 10 papers should be converted into a sessional subject to be assessed internally. The other 9 theory papers would remain for an examination as before. The paper for the internal assessment will also have the same number of marks as the other papers. Consequently it is recommend that the following subjects in different branches of Engineering in III Year B.E. classes be considered for this year as subject for internal assessment as sessional :

- |                      |                                     |
|----------------------|-------------------------------------|
| III B.E. Civil Engg. | : Maths. VIII C                     |
| Elect. Engg.         | : Elect. Engg. Material,            |
| Mech. Engg.          | : Engg. Metallurgy and Material Sc. |
| Mett. Engg.          | : Science of Metals (Met.).         |

- (ii) For IV B.E. in all branches also the above method may be adopted, i.e. there shall be 9 theory papers



of 100 marks each and *one paper for internal assessment* as a sessional also carrying 100 marks. The following subjects in different branches of IV B.E. classes will be considered for internal assessment for the examination of 1979 :

- IV B.E. Civil Engg. : Advanced Structural Analysis or Applied Elasticity and Plasticity.  
 Elect. Engg. : Mathematics IX (E)  
 Mech. Engg. : Production Machines  
 Met. Engg. : Advanced Metallurgy Thermodynamics.

(iii) In view of the fact that in all the classes (from I to Final) the existing semester pattern is being disturbed and the terminal examination at the end of two semesters taken together is being conducted, the Board of Studies feels that there is a necessity to re-examine the present rules and ordinances in respect of the back papers so that the scheme may be suitably modified to suit the combined scheme. The Board accordingly appointed the following Committee for recommending necessary changes well in time to facilitate declaring the results early :

1. Prof. A.V. Ramanujam,
2. Dr. R.K. Gupta,
3. Dr. G. Raj Kumar,
4. Dr. V. Srinivasan      *Convener*

(iv) It was felt that in the present circumstances the semester scheme requiring two separate examinations and the back papers cannot be conducted successfully, it was, therefore, suggested that there should be an annual scheme progressively starting from the batch to be admitted in 1979. An annual scheme programme for the I Year as well as II year

has been prepared by an internal Committee of the M.R.E. College, appointed by the Principal. The Board appoints the following Committee to study the programme submitted by the M.R.E. College and make suitable recommendations :

1. Dr. R.S. Saxena, *Convener,*
2. Dr. R.K. Gupta
3. Dr. G. Raj Kumar
4. Shri G.R. Rao
5. Dr. K.C. Gupta

(18) The question of declaring the results of the even semester examination was raised as the practical examinations for these semesters were not conducted in Oct., 1978, the results could not be declared. The Convener of the Board of Studies informed that this matter has been taken up with the authorities of the University and it is under consideration of the Vice-Chancellor of the University.

(19) The suggestions that there may be minimum number of weeks prescribed for each semester was not approved by the Board.

(20) A question was raised regarding the procedure to be adopted for conducting the practical examinations under the proposed combined two semester examination scheme. It was found that in some cases there will be as many as 10 or 12 examination units to be declared by the students when both the semesters are combined. The Board decided to appoint the following Committee to study this question and make suitable recommendations regarding the procedure for conducting the practical and sessional examinations at the proposed combined Odd + Even Examinations :

1. Dr. R.D. Verma, *Convener,*
2. Dr. V. Srinivasan, *Member,*

3. Prof. C.S. Upadhyaya, *Member,*
4. Prof. T.V. Rajan, *Member,*

The meeting ended with a vote of thanks to the Chair.

Sd/-  
( Dr. R.S. Saxena )  
*Convener.*

## APPENDIX-I

(Ref. Res. No. 5 (iii) of the minutes)

## Non-Conventional Methods of Power Generation

1. *Introduction* : Energy Demands, Energy Conversion and Direct energy conversion, Conventional Generation, Overall Survey of alternative generation processes.

2. *M.H.D. Generation* : Principle of M.H.D. generation ; Faraday and Hall Generator ; Choice of Generator Parameters velocity, magnetic field and conductivity ; Thermal Ionization ; seeding ; Non-Thermal Ionization ; other M.H.D. generator configuration ; Experimental aspects of M.H.D. generator.

3. *Thermionic Generation* : Principle of thermionic generation; Thermionic Emission; Basic Diode thermionic generator and its analysis; space charge reduction; Anode and cathode material; Experimental aspects of thermionic generation.

4. *Thermoelectric Generation* : Principle of thermoelectric generation; seedback, Peltier and Thomson Effect; Relation between coefficients; Generator analysis and figure of merit; Materials; Experimental aspects of thermoelectric generation.

5. *Fuel Cells* : Principle of fuel cells; Hydrogen oxygen cell; Faradays Laws of electrolysis; Thermodynamics of fuel cells, Operation of fuel cells; Redox cell; practical fuel cells.

6. *Miscellaneous Techniques* : Principles of radiation cells; Ferromagnetic generation and Ferroelectric generation.

7. *Controlled Thermonuclear Reaction* : Fusion Reaction, Plasma confinement, Pinch Effect; Recent Devices, Discussion.

## APPENDIX-II

(Ref. Res. No. 5 (iii) of the minutes)

**EHV Transmission Including HVDC Transmission.****(a) EHV A.C. Transmission :**

Economic of Bulk Power Transmission. Problems associated with Bulk Power Transmission over Long Distance. S.I.L. and Power Limit of Transmission lines. 150 to 500 Km longer than 500 Km. Principles of Half-wave length and Quarter-wave Length Transmission Lines. Tuning of Transmission lines, Max. Power limits of Tuned lines. Methods for overcoming stability limitations and loading limitations of long lines. Series and Shunt Compensation, Location of capacitors for compensation. Variation of No Load Receiving End and Mid-Point voltage in a fully compensated line. Switching in problems of series capacitors. Voltage levels necessary for Bulk Power Transmission, Optimum voltage (Voltage and Power Limitations-Corona and stability). Features of 400 KV Lines (Economic short circuit levels, security, Availability of systems, Reactive Power, Stability, Rating of Plant and Apparatus, Amenities). Future needs and voltage levels.

Advantages of Bundled conductors for EHV Transmission Economic Aspect, Transmission Capability, special Features of Bundle conductor lines.

Corona and Radio interference on EHV systems : Basic nature of Corona, Corona discharge mechanism, D.C. corona, A.C. corona, Corona discharge Forms. Corona loss in HV Transmission lines, Effect of Bundle Conductor. R.I. characteristics, origin, effect of weather conditions, Effect of system voltage variation, Analysis of Radio noise, design consideration for acceptable levels of R.I. on EHV Transmission systems.

**(b) EHV D.C. Transmission :**

Brief history, choice of A.C. or D.C. system (Economic point of view), comparison between A.C. and D.C. Transmission for long distance bulk Transmission-limitations of A.C. Transmission, Advantages of D.C. Transmission, Disadvantages of D.C. Transmission, Qualitative description of various converter and Inverter circuits, Central characteristics. Reactive Power Requirements and sources of Reactive Power. Brief description of equipment at D.C. Terminal station Type of D.C. links.

General review of H.V.D.C. Circuit Breaker and measurement of HVDC Quantities.

## APPENDIX-III

*(Ref. Res. No. 6 of the minutes)*

Minutes of the meeting held on September 9, 1978 of the Sub-committee appointed by the Board of Studies in Engineering and Technology vide its Resolution No. 4 (1) dated the 25th August., 1978 (Ref : Registrar, University of Rajasthan, Jaipur letter No. F. 10 (4) /Aca-I-Reg/78/0682M).

*Introduction :--*

The undergraduate engineering curriculum should be considered as a new form of liberal arts education polarised about the engineering sciences. It should serve as a foundation education for the profession of engineering. The student should be given a solid and modern intellectual preparation so that he may accept apart from the conventional vocational callings other allied job opportunities. The technological economy is rapidly changing and the degree programme should be such as to emphasize the development of students' abilities to create new devices, decisions, and techniques and to judge their utility in terms of economic and social factors. Further the programme should engender the awareness of the rural life in India and emphasize as to how the technology could be made available to the rural economy. Also there must be scope in it for the highly talented to have foundations laid for the postgraduate study in business administration, engineering, Applied Physics and Applied Industrial Chemistry.

Thus with the foregoing aims it would be obvious that we should change over to the system of credits where-in the student aided by his course adviser is able to tailor his studies according to his interests and aptitude and the future vocation he is planning for himself consistent with the needs of the society.

**Proposed course of study for Bachelor's Degree in Civil, Electrical, Mech. and Met. Engineering.**

A student must register at least 220\* credits in the manner prescribed below in consultation and prior approval of his course adviser.

- (i) Language and social sciences-20 credits.

- (ii) Physics, Chemistry and Mathematics—Total of 40 Credits out of which not less than 8 credits each in Physics and Chemistry and not less than 15 credits in Mathematics.
- (iii) Practical Geometry, Machine ..... 40 credits  
Drawing and other subsidiary  
engineering subjects other than  
their main field of engineering.
- (iv) Departmental requirements ..... 100 credits
- (v) Unspecified. .... 20 credits.

\*Evaluation of credit will be as under :—

1. One credit per lecture/tutorial contact per week per semester.
2. One credit for a minimum of 2 hours of laboratory/workshop/drawing per week per semester.

#### *Registration Rules :*

1. A student should register for a minimum of 22 credits/per semester. He may be allowed to register upto a maximum of 30 credits/per semester.

#### *Grada:ion :*

The following rules will apply for grading purposes.

1. In lecture/tutorial subjects the candidate should obtain a minimum of 33% to qualify for the award of credits.
2. In laboratory/drawing/workshop the candidate should obtain a minimum of 50% qualify for the award of credits.
3. For the purpose of awarding a division or a class at the end of the course of study the following schemes shall be adopted. The total marks of all credit awards will be totalled up as per scheme below :
  - I. Course numbers whose digit is 1\*\* will have a weight of 20%.
  - II. Course number whose first digit is 2 will have a weightage of 40%.
  - III. Course numbers whose first digit is 3 will have a weightage of 60%.

IV. Course numbers whose first digit is 4 will have a weightage of 80%.

V. Course numbers whose first digit is 5 or above will have a weightage of 100%.

The candidate will be awarded first Class if he secures a minimum of 60% in the aggregate as worked out above; second class if he secures a minimum of 50% of the aggregate and pass class if he secures a minimum of 45% of the aggregate. A Candidate will be awarded a degree with Honours if he secures a minimum of 70% of the total aggregate and provided if he takes an additional 20 credits of courses of level 300 and above (i.e. a minimum of 240 credits).

**\*\*The first digit of the course No. corresponds to the year in which the course is normally taken by a student under-taking a 5 year programme.**

4. If a candidate fails to qualify for the award of credit in any particular course as per para 1 and 2 above, he may reregister himself for the same course wherever it is again offered. In that case he will be required to attend all classes and submit all sessional works as if he was taking the course for the first time. He should also fulfill registration requirements of minimum and maximum credits.

### *Concluding Note*

It is recommended by the committee that the above proposal be accepted. The various courses to be offered by the different departments alongwith the credits and prerequisites may be drawn up by a committee with representation from all the departments.

Sd/-  
R.K. Gupta,  
Member.

Sd/-  
V. Srinivasan,  
Member.

Sd/-  
R.D. Verma,  
Convener.



## APPENDIX-IV

(Ref. Res. No. 7 of the minutes)

The Committee consisting of Dr. R.D. Verma, Prof. M.M. Dandekar and Dr. M.C. Chaturvedi appointed by the Board of Studies in Engineering and Technology vide its resolution No. 4 (12) dated 25th August, 1977 (as was conveyed by the Registrar, University of Rajasthan vide his letter No. F. 10 (4) Aca 1/Reg/78.0674 M dated 1.8.1978) considered the proposals for making certain major changes in the M.E. (Civil) Water Resources Engineering course of the University of Rajasthan and recommends as under :

1. The teaching and examination scheme given in Annexure A (2 pages) with detailed syllabi given in Annexure B (20 pages) may be adopted for the M.E. (Civil) Water Resources Engineering Course of the University.
2. Candidates who study and pass all examinations given in the scheme *except* the following :
  - A Core course : (I) Applied Mathematics
  - B (12) and (13) Electives
  - C (III) Thesis

may be awarded (1) Postgraduate Diploma in Irrigation Engineering and Hydrology if they opted for group (a) in subjects 9, 10 and 11 of the core courses and (2) Postgraduate diploma in Public Health Engineering and hydrology if they opted for group (b) in subjects 9, 10 and 11 of the core courses.

Encl : Annexures A and B

Sd/-  
(R.D. Verma)  
Prof. of Civil Engg.  
M.R. Engg. College,  
Jaipur  
(Convener)

Sd/-  
(M.M. Dandekar)  
Sr. Prof. & Head of  
Civil Engg. Deptt.  
M.R. Engg. College,  
Jaipur  
(Member)

Sd/-  
(M.C. Chaturvedi)  
Sr. Professor, Deptt.  
of Applied Mechanics,  
I.I.T. Delhi.  
(Member).

## APPENDIX A

Teaching and Examination Scheme for M.E. (Civil) Water Resources Engineering Course.  
(Semester System).

S. No.	Subjects	Pre-requi- sites.	Teaching Scheme		Examination Scheme					
			Per week)	Paper No. of hours	Marks	Prac. & Total Session- als				
A. Core Courses										
1.	Applied Mathematics	—	4	1	5	1	4	100	—	100
2.	Probability and Statistics in Civil Engg.	—	2	1	3	1	3	75	50	125
3.	Fluid Mechanics	—	3	1	4	1	3	75	50	125
4.	Principles of Structural Design.	—	2	2	4	1	3	100	—	100
5.	Economic Principles for Water Resources Planning.	—	2	1	3	1	3	75	50	125
6.	System Engineering	—	3	1	4	1	3	75	50	125
7.	Surface Water Hydrology	(2,3)	3	1	4	1	3	75	50	125

S.No.	Subjects	Pre-requi- sites.	Teaching Scheme Per week)		Paper No. of hours	Examination Scheme		Total		
			Lectures	Prac. & Sessionals		Paper	Marks			
8.	Ground Water Hydrology	(2,3)	3	1	4	1	3	75	50	125
9.	a Land and Water Manage- ment.	6	4	2	6	1	4	100	50	150
10.	a Free Surface Flow	3	4	2	6	1	4	100	50	150
11.	a Irrigation Structures Design.	3,4	4	2	6	1	4	100	50	150
9.	b Chemistry and Microbiology for Public Health Engineers,	-	4	2	6	1	4	100	50	150
10.	b Public Health Engg. I	-	4	2	6	1	4	100	50	150
11.	b Public Health Engg. II	3,4	4	2	6	1	4	100	50	150
B. Electives (Any two of the follow- ing)										
12 & 13.	(i) Advanced Fluid Mechanics	1,3, 7,8	4	2	6	1	4	100	50	150
	(ii) Advanced Hydrology	1,3, 7,8	4	2	6	1	4	100	50	150

(iii) Advanced design of Irrigation Structures	11 (a)	4	2	6	1	4	100	50	150
(iv) Advanced Public Health Engg. Design	9 (b) & 11 (b)	4	2	6	1	4	100	50	150
(v) Water Resources Systems	6,7,8	4	2	6	1	4	100	50	150
(vi) Environmental Engg.	—	4	2	6	1	4	100	50	150
C Seminar, Project and Thesis									
(i) Special assignment and Seminar.	—	—	3	3	—	—	—	100	100
(ii) Project	11 a or 11 b	—	4	4	—	—	—	200	200
(iii) Thesis	Completion of all course work.	—	6	6	—	—	—	300	300
Total Group A							925	375	1300
" B							300	100	400
" C							—	600	600
Grand Total							1225	1075	2300

\*The Civil Engg., Deptt., M.R. Engg. College, Jaipur will decide which of the electives will be offered in a particular year.

## APPENDIX—B

## M.E. (Civil) Water Resources Engineering.

## Applied Mathematics :

- (1) Vector Calculus : Vector and Scalar point functions. Gradient, curl and divergence. Divergence and Stokes theorems and their applications.
- (2) Curves, surfaces and volumes : Curvilinear coordinates, Area and volume of a curved surface. Maxima and Minima.
- (3) Complex variables : Cauchy-Riemann equations. Analytic and Harmonic functions. Taylor's and Laurent's series. Cauchy and Residue theorems alongwith their applications. Conformal mapping by elementary functions.
- (4) Matrices : Multiplication of matrices, Transpose, conjugate, adjoint and inverse of a matrix, solution of Linear algebraic equations. Cramers rule. Eigenvalue problem and its engineering applications.
- (5) Differential Equations : Solution of ordinary (first order and second order) differential equation. Bessel function, Fourier Series.

Partial Differential equations, Transform solutions, Greens function. Convolution theorem. Wave equation, Laplace equation. Dirichlet problem.

- (6) Numerical Analysis : Methods for obtaining numerical solutions to problems arising in engineering. Algebraic equations. Interpolation. Numerical Integration of ordinary linear differential equations. Finite difference methods for solution of linear partial differential equations.

## Probability and Statistics in Civil Engineering :

- (1) Probabilities and sets. Discrete sample spaces. Combinatorial theory. Postulates of probability. Conditional probability. Probability Distributions. Binomial and Poisson distributions Multivariate

Probability distribution. Probability densities and distribution functions. Uniform, exponential, gamma, normal and chisquare distributions, Multivariate probability densities. Mathematical expectations and moments of discrete and continuous variables. Linear combinations of random variables. Central limit theorem.

- (2) Statistics : Sampling distributions. Point estimation. Statistical inference and Decision theory. Unbiased estimators. Method of maximum likelihood. Interval estimation. Confidence intervals. Tests of hypotheses; Simple hypotheses. Neyman-Pearson Lemma. Tests concerning means and variances.
- (3) Probability paper and plotting of data. Curve fitting. Method of least squares. Simple linear regression and correlation.
- (4) Application of the above in civil engineering problems.

#### Fluid Mechanics :—

Mathematical foundations of Fluid Mechanics. Historical development.

Ideal fluid theory. Foundations of flow analysis. Basic laws for systems and control volumes. Continuity equation. Eulers' equations, Bernoulli equation. Linear momentum equation. Application. Vector notation.

Incompressible irrotational flow. Circulation vorticity, velocity potential, stream function and flow-nets. Superposition of flows. Pressure distribution around submerged bodies. Lift. Magnus Effect. D'Alembert Paradox.

Real fluids. Viscosity and its significance. Stokes viscosity law. Navier-Stokes equations. Couette flow. Flow in a circular pipe. Creeping motion. Parallel flow past a sphere. Stokes' law for terminal settling velocity and Oseen correction.

Boundary Layer Theory Laminar boundary layers. Two dimensional Boundary layer equations. Blasius solution for flat plate. Momentum integral equation. displacement and momentum thickness.

Separation. Vortex trail. Boundary layer control by various methods.

Introduction to turbulent flow. Eddy viscosity, Reynolds' stresses and significance. Mixing length theory. Turbulent boundary layer : Velocity distribution. Application of momentum integral equation.

Pressure distribution around immersed bodies. Calculation of Drag and lift. Form drag, skin friction drag, total.

Dimensionless Numbers. Eulers Reynolds, and Froudes numbers and their significance.

### Principles of Structural Design :—

- (1) Theory of Elasticity :  
 Analysis of strain and stress. Stress strain relations.  
 Concept of elastic strain energy. Strain energy expressions. Complementary energy.  
 Plane strain and plane stress problems. Equilibrium equations in displacements. Stress compatibility equations.
- (2) Soil Mechanics : Soil sampling. Shear strength of soils, pore pressure. Strength behaviour, stress paths, stress plots and strength generation mechanics. Earth pressure on sheet piles and buried conduits. Footing and Raft foundations.
- (3) Water-retaining Structures : Use of codal provisions for water retaining structures and design of RCC circular, rectangular and intze tanks including underground reservoirs.

### Economic Principles for Water Resources Planning :—

1. *Introduction* : General economic problem, scarcity. The concept of the Production Function, short run production function, long run production, Simple examples of Water Resources projects explaining the concept of production function. The net-benefit function and optimality conditions.
2. *Multiple objective Planning* : Types of benefits and costs to be used in planning, objectives other than

national economic efficiency. Procedures for incorporating multiple objectives in project design and selection.

3. *Economic Factors Affecting System Design* : Budgetary constraints. A limited investment budget versus a limited expenditure level. Decision in the presence of budgetary constraints. Introduction to optimization models. Allocation of a limited budget. Dynamics and planning procedure in implementing budgetary constraints.
4. *Measurements of Economic Efficiency Benefits and Costs* : Examples of project benefits and costs. Measurement of benefits and costs comparable in monetary terms. Simulation of market prices. Concept and measurement of costs. Handling of price changes over time. Use of the cost of the best alternative project as a measure of benefits, Issue of secondary benefits and costs. Managerial analysis of a project.
5. *Comparison of Benefits and Costs over time* : Rate of return. Annual cost and annual worth comparisons. Present worth analysis. Determination of the discount rate. Benefit and cost patterns over time. Appropriate length of the planning period.
6. *Criteria for Project Design and Selection* : Consideration of a broad range of alternatives. Rules for optimum project design. Rules for optimum selection of projects. Role of pricing. Intangible benefits. Introduction to cost-effectiveness analysis.

#### Systems Engineering :--

- (1) Use of computers : Analog and digital computers. Basic principles of Fortran programming.
- (2) Basic concepts of a system and systems engineering. Problem formulation. Limitations of systems engineering. optimization methods.
- (3) Linear Programming : Fundamental properties. Graphical and Simplex methods. Simplex tableau.



Duality theory. Parametric linear programming. linear programming. The Transportation problem.

- (4) Network Analysis : CPM and PERT.
- (5) Dynamic Programming : Characteristics and formulation and solution of simple problems.
- (6) Simulation : Basic principles. Generation of random numbers.
- (7) Decision Theory : Decision under certainty, under risk and under uncertainty.

### Surface Water Hydrology :—

- (i) *Meteorology* : Atmosphere as a vehicle for transfer of water, humidity. precipitation, evaporation. Weather forecasting. Determination of the total rainfall on an area: of area, intensity, duration of maximum rainfall. Probable maximum precipitation.
- (ii) *Measurement of Surface Flow* : Methods of measurement and instruments : velocity and area, chemical dilution, gauging structures. The stage discharge relation.
- (iii) *Evaporation and Infiltration* : Measurement and estimation of evaporation from land and water surfaces. Water budget, energy budget and mass transfer methods. Reduction of evaporation. Transpiration and its estimation. Evapotranspiration. Infiltration. Factors affecting infiltration. Infiltration indices.
- (iv) *Hydrograph Analysis*: Surface runoff. Overland flow Factors affecting runoff. Rational formula. Hydrography analysis. Unit hydrograph. Scurve hydrograph. Instantaneous Unit hydrograph. Channel and storage routing. Flood estimation. Estimation of yield. Synthetic unit hydrographs.
- (v) Statistical Methods in hydrology : Analysis of discrete and continuous hydrologic data. Harmonic analy-

sis. Statistical analysis including frequency analysis. Normal, Log-normal and Pearson distributions. Correlation and regression analysis, Multivariate Analysis.

(vi) Hydrology of Arid and Semi-arid lands. Droughts.

### Ground Water Hydrology :—

- (1) Occurrence of ground water. Porous materials. Darcy's law. Permeability and porosity. Anisotropy. Hydraulics of ground water. Differential equations of flow.
- (2) Potential Flow : flownets, boundary conditions. Steady State flow. Confined aquifer. Unconfined aquifer.
- (3) Mechanics of well flow and pumping tests : Steady and unsteady flow in confined and unconfined aquifers. Boundary effects and methods of images. Leaky aquifers. Partial penetration of wells. Interference of well. Yield of wells.
- (4) Ground water development'. Tubewells. Artificial recharge. Conservation. Ground water prospecting. Ground water level fluctuations. Salinity of ground water. Ground water pollution. Infiltration galleries.

### Land and Water Management :—

- (1) *Irrigation Soils* ; Soil moisture movement. Irrigation and water requirements of crops. Unsaturated flow in porous media. Moisture profiles during infiltration due to ponded water.
- (2) *Irrigation Methods* : Elements of irrigation control structures. Irrigation and distribution systems. Corrugation and furrow irrigation, Border strip irrigation, sprinkling and drip irrigation. Sub-irrigation. Land levelling.
- (3) *Drainage* : Physical and mathematical theories of till and ditch drainage. Design of a drainage system.

- (4) *Conservation of water resources* : conservation practices, command area development. Lining of canals and water courses. Evaporation control, mulching. Multiple cropping. Irrigation practices in arid and semi-arid lands.
- (5) *Soil erosion* : Soil erodibility, rain and flow erosivity, slope and length effect, gully erosion, erosion equation. Control of soil erosion.
- (6) *Flood control* : Flood plain management. Flood damages. Structural and non-structural measures of flood control.
- (7) *Mathematical Models of Land and water management*. Conjunctive use of surface and ground water.

#### Free Surface Flow :—

1. Energy and momentum principles in open channel flow. Principles of varied flow.
2. Non-uniform flow : Direct integration methods, step methods, computer methods. Spatially varied flow.
3. Channel controls : sharp crested weirs, overflow spillway free overall and energy dissipators.
4. Channel transitions : Expansions and contractions, changes of directions, culverts, bridge piers, lateral inflow and outflow, transition design.
5. Unsteady flow : Equation of motion. Shallow water equations and their solutions. Methods of characteristics. Dam-Break problem. Kinematic wave theory. Flood movement in long rivers.
6. Waves : Standing waves. Waves in a moving stream. Finite amplitude wave theory.
7. Similitude and Models : Basic principles. Incomplete and approximate similitude. Fixed-bed river and structural models. Moving-bed models.

#### Irrigation Structures Design :—

*Dams*, Different kinds of dams and the choice criteria.

*Gravity dams.* Various forces acting and their analysis and representation. Stability requirements. Two dimensional analysis. Distribution of normal and shear stress. Principal stresses. Joints and their treatment.

Foundation treatment, grouting, drainage wells, drainage galleries. stress concentration.

*Embankment dams :* Homogenous and zoned earthen embankments. Foundation requirements. Typical cross-sections.

Stability analysis of earthen dams. Slip circle method. Wedge method. Seepage through and beneath dams. Cosagrande's base parabola. Calculation of seepage rate. Flow net during steady seepage and during sudden drawdowns. Pore pressures and their significance. Design of filters and rock toes. Slope protection. Earth moving equipment.

*Rockfill dams. & Earth-rock dams.* Construction techniques of embankment dams. Modes of failure.

*Arch dams.* Constant angle, constant radius and double curved dams.

*Methods of analysis.* Cylinder theory, Elastic theory. Trial load analysis. Introduction to modern methods of analysis.

*Spillways.* Different types of spillways and their design criteria. Design of stilling basins. Design of weirs and canal structures on permeable foundations. Khosla theory and applications.

### **Chemistry and Microbiology for Public Health Engineers :—**

1. Elements of water chemistry : Solution and suspension of impurities, solutions and solubility. Solutions of Ionised Solutes Chemical equilibria in solution. Acid-base equilibria. Oxidation-Reduction Processes. Electrode potentials. Rates of chemical reactions. Absorption isotherms. Electrokinetic properties of colloids. Stability and Coagulation of colloids.
2. Basic concepts of Bio-chemistry : Enzymes. Buffers. Biochemistry of Carbohydrates, proteins, fats and oils.

3. Analysis of water and waste water : Physical, chemical and bacteriological tests commonly used for the analysis of water and waste water.
4. Fundamentals of Sanitary Microbiology : Bacteria (forms, cell structure, chemical composition. Metabolism) Algae (identification, classification, culture media metabolism), Protozoa. Rotifers. Cestaceans. Worms and Larvae. Energy concepts in biodegradation. Synthesis, growth and death of micro-organisms. Population dynamics.

### Public Health Engineering I :—

1. Unit Operations : Fluid Transport in open conduits. Mixing. Sedimentation. Flow through beds of solids. Vacuum filtration. Gas transfer. Adsorption.
2. Unit Processes : Water stabilization. Coagulation. Disinfection. Ion exchange. Electrodialysis. Defluoridation and desalination of water. Taste and odour control. Biological oxidation principles.
3. Kinetics of plugflow and completely mixed reactors. Batch processes. Activated sludge processes and its modification. Oxidation ditches and aerated lagoons. Trickling filters. Waste stabilization ponds.
4. Aerobic and Anaerobic digestion of sludge. Handling and disposal of digested and undigested sludge.
5. Disposal of sewage by dilution self-purification of streams. Disposal of sewage on land. Sewage farming.

### Public Health Engineering II :—

1. Principles of water quality management.
2. Water Treatment Plant Design : General design considerations. Types of Plants. Detailed design of various units such as : Aeration, Rapid Mixing and Flocculation. Sedimentation, Filtration, Chlorination and disinfection.

3. Design of water distribution system. Hardy cross methods.
4. Design and Construction of Sanitary and Storm Sewers : Surveys and investigations, Quantity of Sanitary Sewage. Quantity of storm water. Design of Sewer Systems. Manholes. Sanitary Sewage Diversion and Storm water overflow devices. Siphons. Materials for sewer construction. Construction methods.
5. Design of waste water and stormwater pumping stations.
6. Sewage Treatment Plant Design : Detailed design of various units of sewage treatment plants.
7. Principles of industrial waste treatment. Collection and disposal of solid wastes.

#### Advanced Fluid Mechanics :—

1. Ideal fluid flow : Three dimensional Line source and sink, doublet flow in a corner and other examples of superposition. Principles of conformal mapping.
2. Laminar flow : Approximate solutions of Navier-Stokes' equation for simple cases. Laminar two dimensional jet. Flow past a wedge. Parallel streams in laminar flow.

Hydrodynamics of jets, wakes and cavities. Spreading of wakes. Elements of Dispersion and diffusion.

Vortex fields, vortex rings and vortex sheets. Kelvin's theorem.

3. Turbulent flow : Reynolds' equations. Measurement of turbulence. Iso-tropic turbulence and its dynamics. Turbulent diffusion. Energy spectrum.
4. Differential equations of motion for unsteady flow in pipes and channels and methods of solution.
5. Elementary Two-phase flow in porous media.

6. Flow-induced vibrations. Stability of flow. Veder-nikov and Strouhal Numbers.

#### Advanced Hydrology :—

1. Principles of hydrometeorology, cloud seeding. Weather forecasting.
2. Instantaneous unit hydrographs. Time area diagrams. Conceptual mathematical models. Hydrologic system Analysis and system synthesis. Non-linear systems.
3. Simulation models for rainfall and runoff relationship.
4. Stochastic Hydrology. Time series analysis.
5. Physical and mathematical principles of steady and unsteady ground water movement. Solution of ground water problems by conformal mapping. Boussinesq equation and its solution.
6. Principles of ground water management.
7. Hydrology of floods and droughts. Statistical theory of extreme values. Gambels asymptotic distribution for floods and droughts.

#### Advanced Design of Irrigation Structures :—

- (1) Design of buttress dams. Unit column method. Multiple-arch dams. Miscellaneous dams. Instrumentation for concrete dams.
- (2) Design of vertical lift and sector gates. Flow induced vibrations and down-pull forces. Gate seals.
- (3) Design of penstocks, surge tanks and tunnels for water carriage system. Intake and Trash-rack design.
- (4) Design of outlet sluices through dams.
- (5) Principles of design of hydro-power stations. Under-ground installations.

- (6) Aesthetics in design of irrigation structures.
- (7) Construction planning of dams. Dewatering. Cofferdams.
- (8) Design of canal falls and regulators, cross drainage works, canal outlets and river training works.

#### Advanced Public Health Engineering Design :—

1. Recent advances in wastewater treatment technology. Developments in Physical, Chemical and biological treatment processes.
2. Molecular diffusion of mass in binary systems. Statistical theory of diffusion. Longitudinal dispersion.
3. Design of water treatment and wastewater treatment units.
4. Industrial wastewater treatment : Pre-treatment methods. Centrifugation and filtration. Microstrainers. Evaporation and concentration. Distillation. Neutralization. Liquid-solid separation. Biological oxidation. Removal of specific components. Activated carbon adsorption. Reclamation of wastewater effluents. By product recovery. Ion exchange systems. Design of waste water treatment units from typical industrial wastes such as pulp and paper, woollen mill, steel and petroleum industries.

#### Water Resources Systems :—

Introduction to the fundamentals of water resources systems analysis, involving the determination of the optimal dimensions, target outputs, and operating policies of water resource projects. Overview of methodologies of analysis : Use of optimization techniques for solving water resources problems. Examples in water distribution systems, flood management, river basin planning for irrigation and hydroelectric power. The storage yield relationship. Reservoir design. examples in surface and groundwater reservoirs. Water resources investment timing; capacity expansion of water supply alternatives. Decomposition and multi-level optimization in water resources management.



**Environmental Engineering :—**

- (1) Environment and its affects on man. Interaction of man and its environment. Principles of Ecology ; ecosystems, food webs and population density, energy flow through the biosphere, population dynamics, food production, Eco-system models—chemical and biological prcesses. Ecological values and regional planning. Environment and ecology at small dams.
- (2) Water Pollution : Principles. Quality of impounded water. Eutrophication. Reuse of waste water. ground water pollution. Water pollution control act. Use of wastewater for agriculture. Water quality standards.
- (3) Air Pollution : Emission sources. Photochemical smog. Respiratory diseases and chronic health effects. Hazardous air pollutants. Meteorology of air pollution. Atmospheric stability. Thermal inversion. Air pollution control techniques. Control of particulates. Sulphur and nitrogen oxides control. Air quality surveys.
- (4) Solid waste disposal : Generation and characteristics of solid wastes. Voume reduction. Collection systems. Advances in composting, Sanitary landfills and incineration techniques. Solid wastes management.
- (5) A brief idea about noise and land pollution.
- (6) Impact on world resources, energy resources and conservation of energy.
- (7) Environmental quality management—Mathematical models for management.

## APPENDIX-V

(Ref. : Res. No. 8 of the minutes)

Copy of letter dated 11.9.78, from Dr. S.C. Sharda, Reader in Structural Engg., Structural Engg. Department, M.R.E. College, Jaipur to the Chairman, Board of Studies, Faculty of Engineering, University of Rajasthan, Jaipur.

*Sub. :-* Change of Nomenclature of certain subjects.

Some two years back the syllabus of the subject of Soil and Foundation Engineering (taught in IV year at that time) was bifurcated to be taught in IV and Final Year Civil Courses. the nomenclatures given to the bifurcated courses were (i) Soil Mechanics in IV Year Civil (ii) Foundation Engineering in Final Year Civil. With my knowledge of this special field, I can firmly say that the nomenclatures are inappropriate in that they do not represent the contents of the courses. The two items soil and foundation engineering inseperable in their initial stage of teaching.

It is, therefore, proposed that the nomenclature of these two items be changed as below :—

<i>Item</i>	<i>Present nomenclature</i>	<i>Taught in class</i>	<i>Proposed Nomenclature.</i>
1.	Soil Mechanics	IV Yr. Civil	SOIL AND FOUNDATION ENGINEERING-I.
2.	Foundation Engg.	V Yr. Civil	SOIL AND FOUNDATION ENGINEERING-II.

## APPENDIX-VI

*(Ref. Res. No. 9 of the minutes)*

Copy of letter dated 13.9.78, from Dr. S.C. Sharda, Reader in Structural Engg., Structural Engineering Department, M.R.E. College, Jaipur to the Chairman, Board of Studies Faculty of Engineering University of Rajasthan, Jaipur.

*Sub. :—Regarding remuneration for M.E. Examination work.*

It is observed from the examination scheme for M.E. (Structures) that the subject of Foundation Engineering and Retaining structures has been placed in the first semester and as such it is less remunerative than the subjects taught in the subsequent semesters. It is unfortunate that at Master's degree level subjects be discriminated against for remuneration. I wish to point out that had this course been of M.E. (Soil-Mechanics and Foundation Engineering), the same subject would have been eligible for a full remuneration without the change of contents. Further, it is interesting to note that this subject would be taught in the IIIrd semester of the present session which suggests that proposal for keeping it in the I semester was improper as this is not a pre-requisite for other subjects.

It is, therefore, requested that the remuneration for this paper which is equally important as compared to any other Papers of other semesters may be brought at par with the remuneration of the other semesters.

## APPENDIX-VII

*(Ref. Res. No. 10 of the minutes)*

Copy of note made by Dr. K.S. Shah, Prof. and Head of the Deptt. of Mech. Engg. duly forwarded by the Principal, M.R.E. College, Jaipur vide letter no. F. 4 (N) /7/Acdm/MREC/76/17203, dated 10th Nov., 1978.

**Mechanical Engineering Department.**

30th Sept., 1978.

With reference to your kind Note dated 29th Sept., 1978 regarding the paper on 'Roto Machine-II of VIII Semester (Mechanical) held on 28th Sept., 1978, I have received a request signed by most of the students of the above class requesting that the paper which they mass-cut on 28th Sept., 1978, be re-set at the earliest possible moment. I have sent the application to the Co-teacher and co-moderator, Dr. V. Srinivasan for his comments on 28th Sept., 1978. As soon as I receive the same, I will the request of the students to you with my comments.

Regarding the syllabus of the subject, it is considered that the syllabus is more or less fully covered by the book "Turbo Machinery" by Shepherd. However, on receipt of complaints from teachers and students as well as on my own I have been continuously requesting the Board of studies since 1975 onward for changing in the syllabus of the above subject, but the Board of studies has also been consistently receiving letter of such changes, even when the Board has been granted major changes in other subjects and other departments. I, now being the Member of the Board of Studies upto 1979, it was not possible for me to offer me the above described difficulty. From 1979, I am again a member of the Board of Studies and the suggestion of the member regarding changes of syllabus of "Roto Machine-II" will be put up in the next meeting of the Board of Studies in Engineering Department of the University of Rajasthan.

However, I may mention here that the last faculty meeting has decided not to permit any changes to be effective atleast for two years after the approval of the same by the appropriate body.

Sd/-K.S. Shah  
Sr. P.M.E. and H.

## APPENDIX-VIII

(Ref. Res. No. 12 of the minutes)

Teaching and Examination Scheme for M.E. (Met) in Nonferrous Industrial Metallurgy for semester system.

## (A) Teaching scheme

M.E. (Met) in Nonferrous Industrial Metallurgy.

*First Semester.*

Hours/Week

	L	P
1. Mathematics	4	2
2. Advanced Aluminium Technology	4	2
3. Research Techniques in Metallurgy	4	2
	12	6=18

*Second Semester*

4. Advanced Material Science	4	2
5. Advanced Non-ferrous Metallurgy	4	2
6. Industrial Metallurgy	4	2
	12	6=18

*Third Semester*

7. Industrial Budgeting & cost Management	4	2
8. & 9. Any two of the following		
(a) Elective I	4	2
(b) Elective II	4	2
(i) Physical Metallurgy of non-ferrous metals & alloys		
(ii) Advanced Metallurgical Thermodynamics		
(iii) Advanced Metallurgical Kinetics		
(iv) Physical Metallurgy of light metals and alloys		
(v) Advanced Mineral Dressing		
(vi) Operational Research and computer Programming		
(vii) Production Management and control		
(viii) Non-ferrous Foundry Practice		
	12	6=18

*Fourth Semester*

10. Project                      Total contact hours with the  
 11. Seminar                    students shall not be less than 18 hours.  
 12. Dissertation

The Electives to be offered will be announced at the beginning of each Semester by Principal M.R.E.C., Jaipur.

**SCHEME OF EXAMINATION***( First Semester )*

	Paper Durat- ion	Max. Marks	Course Work.	Total
1. Mathematics	3	100	50	150
2. Advanced Aluminium Technology.	3	100	50	150
3. Research Techniques in Metallurgy.	3	100	50	150
		300	150	450

*(Second Semester)*

4. Advanced Materials Science	3	100	50	150
5. Advanced Non-ferrous Metallurgy	3	100	50	150
6. Industrial Metallurgy	3	100	50	150
		300	150	450

*(Third Semester)*

7. Industrial Budgeting and cost management	3	100	50	150
8. Elective-I	3	100	50	150
9. Elective-II	3	100	50	150
		300	150	450

*(Fourth Semester)*

10. Project		250	250
11. Seminar		100	100
12. Dissertation		300	300
Grand Total—		900	1100
			2000

### Detailed Syllabus

The Syllabi of the following subjects are same as approved by the Board of Studies in their meeting held on 25.8.77 (page 699 to 706) :—

- |  |               |
|--|---------------|
| 1. Advanced Aluminium Technology—                      | Semester -I.  |
| 2. Research Techniques in Metallurgy—                  | Semester I.   |
| 3. Advanced Materials Science—                         | Semester II.  |
| 4. Advanced Non-ferrous Metallurgy—                    | Semester II.  |
| 5. Industrial Budgeting & Cost Management—             | Semester III. |
| 6. Physical Metallurgy of Non-ferrous Metals & Alloys— | Semester III. |
| 7. Advanced Metallurgical Thermodynamics—              | Semester III. |
| 8. Physical Metallurgy of Light Metals & Alloys—       | Semester III. |
| 9. Advanced Mineral Dressing—                          | Semester III. |
| 10. Non-Ferrous Foundry Practice—                      | Semester III. |

The Syllabi of the following subjects are enclosed herewith :—

- |   |               |
|---|---------------|
| 1. Mathematics—                                   | Semester I.   |
| 2. Industrial Metallurgy—                         | Semester II.  |
| 3. Operational Research and Computer Programming— | Semester III. |
| 4. Production Management & Control—               | Semester III. |

Proposed revised syllabus for 'Mathematics' M.E. (Met.)  
I Semester :—

#### Statistics :

Diagrammatic presentation of data. The normal, binomial and Poisson distributions. Comparison of means and variances. Linear and multiple regression. Analysis of variance. Introduction to experimental design and to other methods of multivariate analysis.

#### Numerical Analysis :

- (i) The solution of non linear equations by Newton Raphson secant and Regula falsi methods.

- (ii) Interpolation and Approximation :—Langrangian Polynomial, Linear Interpolation, Inverse Interpolation, Finite difference Calculus, Central Forward and backward differences formulae.
- (iii) Numerical Interpolation be trapezoidal, Simpson and Newton-Cotes methods. Gaussian quadrature.
- (iv) Matrix Methods :—Solution of linear equations by elimination Matrix inversion, the eigen values Problem, Gauss-Seidel method.
- (v) Solution of Differential equations : Euler methods. Runge Kutta method, Predictor corrector methods. Discussion on stability and convergence.

### Industrial Metallurgy ;—

Layout of metallurgical industries and their units.

Methods of determining efficiency and productivity of manufacturing units and factors affecting them.

Network techniques : Gantt chart, CPM, PERT. Application to metallurgical industries and maintenance. Time and motion study.

Energy and material balances and flowsheets. Evaluation of various iron and steel making processes. Study of fuel and refractory policy of metallurgical industries.

### Production Management and Control :—

Production planning control and scheduling. Inventory control. Facilities for planning. Importance in metallurgical industries.

Forecasting, trend analysis using moving average, exponentially smoothed moving average and regression techniques. Applied to prediction of market price, of metals and raw materials.

Inventory control, Economic batch quantity model, stock out costs, probabilistic demands. Applied to forging stock inventory levels.

Standards at specification. Inspection objectives, efficiency indices.



Sampling, control charts, statistical quality control producer and consumer risks and the power of tests.

Organisation of quality control department and human relations aspects in an integrated metallurgical plant.

Process control-on line and off line methods. Illustrated by reference to control of pneumatic steelmaking Aluminium production rolling and forging etc. Types of computers suitable for such applications, Instrumentation in metallurgical industries.

### Operational Research and Computer Programming :—

Decision making models and their use in metallurgical industries

Simulative models. Monte carlo method, hand Simulation (of inspection of castings). Computer simulation packaged library programmes. Used to evaluate strategies in a hot tube piercing plant.

Optimisation models-linear programming by graphical algebraic and simplex routines. Applied to leastcost furnace charge calculations and machine time allocation problems.

Transportation methods. Stepping Stone, algorithm using N.W. Corner and Vogel methods, Applied to assigning orders to a metallurgical plant.

Computerisation of optimising methods, use of library programmes on large problems.

Queueing theory-review of theory, application of finite length and infinite length queueing equations to problems in breakdown, maintenance and flow production respectively

Heuristic simulation, rules of skill, priority rules, constrain application in computer programmes, in forging production schedules and in a hot rolling mill.

### Computer Programming :—

Introduction : Types of computers, digital, analogue and hybrid internal working of computers, communication using binary coding and high level languages storage devices and input/output facilities.

Fortran IV language : Arithmetic operations, arithmetic statement, input/output, Read, Print, and Write Statements, Format statements for Real, Integer and exponent field. Skip specifications. Go to Statement. Arithmetic I.F. Computed Go To and Nested Do statements. Continue statement, logical expression and logical IF, double and single precision statements. Complex statement. Subscripted variables and Dimension statement. CALL statement, DATA/BLOCK DATA statements.

Flow diagram and programming for the metallurgical problems such as :—

1. Thermic chemical data calculation
2. Adiabatic flame temperature calculation
3. Calculation of blast variable for a given adiabatic flame temperature.
4. Cooling problems in a transfer of hot metal.
5. Computing the scrap requirement in steelmaking.
6. Heat transfer problems in steady and unsteady state as applied to metallurgical Engg.
7. Linear Programming and optimization problem .
8. Linear regression analysis in metallurgical Engg.
9. Network analysis for metallurgical maintenance and production.

## APPENDIX-IX

( Ref. resolution No. 13 of the minutes )

MALAVIYA REGIONAL ENGINEERING COLLEGE  
JAIPUR ( RAJASTHAN )

Dr. K.S. Shah  
Sr. Prof. & Head  
No. PMEH Mech 23 77

Dated: 30th Aug., 77.

The Dean,  
Faculty of Engineering and Technology.  
University of Rajasthan,  
Jaipur.

*Sub* :—Request for inclusion of some items on the agenda of the next meeting of the faculty of Engg. and Technology.

Dear Sir,

I have to request you to consider inclusion of following items on the agenda of the next meeting of the Faculty. The reasons for each item are given in brackets after each item.

1. *Renaming M.E. ( Manufacturing Engineering ) course as M.E. ( Industrial Engineering & Management ) course, w.e.f. 1978-79 ( including existing batches )*

( The course is being run for employed Mechanical Engineers. The potential candidate come from N.E.I. Ltd, R.S.R.T.C. R.S.E.B., P.H.E.D. The existing course has majority of subjects out of nine papers, relating to industrial management and the rest on production/industrial engineering. Thus the present name of the course "Manufacturing Engineering" is a misnomer and needs to be changed to "Industrial Engineering and Management" for rational purposes. Absolutely no changes in the syllabus, schemes of teaching and examination are envisaged. Thus renaming can be effective from existing batches of students admitted to the Course ).

2. *Slight change in names of laboratory sessionals without any change in scheme of Teaching.*

With effect from Nov/Dec., 1978 and April/May 1979 semester scheme of examination, reorganization of Mechanical Engineering Laboratory sessionals is proposed :

S.No.	Semester	Laboratory sessionals			
		Orininal designa- tion	Hours/ Week	Marks Proposed designa- tion	Hrs/ Ma- Week rks
1.	5th Sem. (M)	Tech. Dyn. Lab	2	50	Mech. Engg. Lab. I 2 50
2.	6th Sem. (M)	Mech. Engg. Lab.	2	50	Mech. Engg. Lab. II 2 50
3.	7th Sem. (M)	Mech. Engg Lab.	2	50	} Mech. Engg. Lab. III 6 150
4.	—do—	Heat Transfer Lab.	2	50	
5.	—do—	Prod. Lab.	2	50	
6.	8th Sem. (M)	Metrological Metal cutting Lab.	2	50	} Mech. Engg. Lab. IV 6 150
7.	—do—	Aero & Gas. Dyn Lab.	2	50	
8.	—do—	Tech. Dyn. Lab.	2	50	
9.	9th Sem. (M)	Industrial Engg. Lab.	2	50	} Mech. Engg. Lab. V 6 150
10.	—do—	Tech. Dyn. Lab.	2	50	
11.	—do—	Roto Dyn. Lab.	2	50	
12.	10th Sem. BE (Mech)	Refrigeration Lab.	2	50	Mech. Engg. Lab. VI 2 50
13.	—do—	Fabrication Project	6	250	Project 6 250

3. *Change in syllabus of Technical Dynamics-I at V Semester (Mech) examination w.e.f. Oct/Nov. 1979 Exam.*

(i) delete para 1 and 2.

(ii) add between para 5 and 6 following para :

*Wear* : Mechanism of wear, Adhesion, abra-  
sion, diffusion, Cavitation, f.tigue. Krishov's

equation : Assessment of wear. Units. Gear wear, Pitting, spalling, Peening, rippling, burning, scoring and scuffing. Causes of wear.

(The contact hours for the students with effect from 1977-78 have been reduced by the University bodies from about 35 hours per week to about 30 hours per week time available per subject is less. Keeping this fact in view the above-trimming of the syllabus is essential.)

4. *Change with effect from Nov./Dec., 1978 VII Semester (Mech.) Examination.*

(a) *Paper on Mechanical Engineering Design-I*

(i) *Delete* para 1 and 2

(ii) *Add* : after last para : Design of gear teeth, Lewis and Buckingham equations. wear considerations. Design of fixed ratio Gear Boxes.

(b) *Paper on Production Technology*

*Delete* para 4 on gear Manufacture.

(The contact hours for the students with effect from 1977-78 have been reduced by the University bodies from about 35 hours per week to 30 hours per week. Time available per subject is less., Keeping this fact in view the above trimming of the syllabus is essential. Further the para on gear Manufacture is already included in the syllabus of the paper "Production Materials and Processes" at 5th semester BE (Mech) course. Hence it is proposed to be removed from the syllabus of the paper of Production Technology 8th Semester of the BE (Mech) to avoid repetition of the syllabus).

5. *Change with effect from April/May 1980 examination*

In paper *Production Management* at X semester (Mech.) *Delete* para 4 and 5.

(The contact hours for the students with effect from 1977-78 have been reduced by the University bodies from about 35 hours per week to about 30 hours per week. Time available per subject is less. Keeping this fact in view the above trimming of the syllabus is essential.)

It is understood that Board of Studies in its meeting on 25th August, 1977 has resolved that no changes be made in the Schemes of teaching and examinations or names of courses for atleast two years. I would not have Proposed the above 5 changes except for following unavoidable reasons :

1. Many of the above changes were proposed by me at the Board of Studies meeting dated 21st Sept., 1976 but the Board resolved in that meeting that these changes be proposed in 1977 meeting of the Board.
2. I would have proposed these changes at Board of Studies meeting of 25th August, 1977 but the fact that I came to know about meeting on 24th August, 1977. Had I proposed the changes for the meeting of 25th August, 1977 on 24th August, 1977 then the fate of the proposals would have been the same as last year.
3. I also understood that the Board of studies on 25th August, 1977 felt that in view of the 10+2 system, engineering degree course will very soon be of 4 years and hence no changes should be made in the existing schemes of teaching and examination. But the changes suggested above are long over due and essential and as also the fate of 10+2 system is yet unknown.
4. The changes suggested above mainly consist of Change of nomenclature and in three cases very minor changes in syllabus (to avoid repetition and to keep up the reduced contact hours prescribed last year).

Keeping the above difficulties in view, it is requested that above five changes which are minor changes may kindly be allowed to be put up before the next meeting of the Faculty of Engineering and Technology.

Yours faithfully,

Sd/-

Dr. K.S. Shah

Member

Board and Faculty of Engineering & Technology.

Endorsed by the Dean Faculty of Engg. vide his latter No. F4 (N) 8/Acdm/MREC/73/15788, dated the 5th oct., 1977.

## APPENDIX-X

(Reference res. No. 15 of the minutes).

Copy of the letter No. F. 4N (7) Acdm./MREC/76/17647 dated 21.11.1978 received from Principal, Malaviya Regional Engineering College, Jaipur addressed to the Registrar, University of Rajasthan, Jaipur.

I am sending herewith a copy of letter received from the Board of Technical Education, Rajasthan, Jodhpur regarding recognition of the Diplomas awarded by Board of Technical Education, Rajasthan as equivalent to degree for being placed before the Board of studies in Engineering and Technology at its next meeting.

BOARD OF TECHNICAL EDUCATION, RAJASTHAN,  
JODHPUR.

No. BTE/General/F. 7-11/77

Dated. —————

The Registrar,  
\_\_\_\_\_  
\_\_\_\_\_.

*Subject :* Recognition of the diplomas awarded by Board of Technical Education, Rajasthan, as equivalent to degree.

Sir,

The students of Polytechnics in Rajasthan remained on strike from 26.9.1977 to 24.10.1977. One of their demands during the strike was that the admission qualifications to diploma courses should be raised to Higher Secondary and the Diploma awarded to them by the Board should be recognised equivalent to three years degree courses of the university in science stream.

It is, therefore, requested to kindly let this department know, whether University could recognise the three year diploma in Engineering awarded by the Board of Technical Education, Rajasthan, Jodhpur as equivalent to a three years degree course of the University if the admission qualification is raised to a pass in Higher Secondary Examination. The present minimum admission qualification is a pass in Secondary examination with Science and Maths. of Board of Secondary Education, Rajasthan, or equivalent qualifications.

Yours faithfully,  
Sd/-  
Registrar.

MINUTES OF THE SPECIAL MEETING OF THE BOARD OF  
STUDIES IN BOTANY, HELD ON 26TH JUNE, 1979 AT,  
10.00 A.M. IN THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. H.S. Narayana
2. Dr. M.S. Ghemavat
3. Dr. P.L. Mittal
4. Dr. D. Singh—(Special invitee)
5. Professor, H.C. Arya—(External member)
6. Professor, B. Tiagi—(Convener)

1. With reference to Academic Council Resolution No. 16 dated 15.5.1979 and the Syndicate Resolution No. 2 (III), dated 26/27th May, 1979, the Board recommended courses of Study for the M.Sc., Botany, (Annual Scheme) exams. of Prev. 1980 and 1981 and Final Exams. of 1981 and 1982.

2. With reference to Academic Council Resolution No. 10 dated June 1, 1979 and the Syndicate Res. No. 3 dated 16th June, 1979, the board *resolved* to do away with the unitwise breaking up of the Syllabus of various papers for all the examinations in Botany. Necessary changes in this direction have been incorporated in the 1979 edition of the Syllabi and the same be got printed accordingly.

Convener,  
Board of Studies in Botany



MINUTES OF THE SPECIAL MEETING OF THE B.O.S. IN  
HISTORY HELD ON 30TH JUNE, 1979 AT 10.00 A.M. IN  
THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. V.S. Bhargava—(Convener)
2. Dr. G.N. Sharma
3. Dr. B.D. Sharma
4. Dr. G.S.L. Devra.
5. Shri P.N. Mathur
6. Shri H.S. Sharma
7. Dr. M.S. Jain—(Special Invitee)

*N.B.*—Dr. B.S. Mathur, Udaipur could not attend the meeting

1. The Board *resolved to recommend* the courses of study for the M.A. (previous) Examination of 1980 and Final Examination of 1981 in the Alternative scheme according to annual scheme of examination consequent upon the abolition of semester scheme of examination in gradual stages which is being offered by the students of the University Deptt. of History (*Vide Appendix-I*)

2. The Board further *resolved to recommend* that the University should permit the affiliated colleges also to opt for the alternative annual scheme, if they so desire w.e.f. the exam. of 1980.

3. With reference to Academic Council Res. No. 10, dated 1st June, 1979 and Syndicate Res. No.3 dated the 16th June, 1979 the Board *resolved to recommend* that the Word "Unit" be deleted in all the syllabii of the under graduate and post graduate examinations in the subject, and accordingly 1979 editions of the syllabii prescribed for the various Exams. of 1981 be got printed.

4. The Board could not complete the translation work of the syllabii in Hindi and, therefore, *resolved to recommend* that 1979, edition of the Syllabii for all the exams. be printed in English Version

only, in view of decision already taken by the Academic Council vide its Res. No. 4(A) c Dated 15.5.79 and the Syndicate vide its Res. No. 2(III) dated the 26/27th May, 1979.

The meeting ended with a vote of thanks to the Chair.

**Dr. V.S. Bhargava**  
(*Convener*)

## SCHEME OF EXAMINATION

## M.A. EXAMINATION

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-Voce (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical(s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	} of the aggregate marks taken together of the Previous and the Final Examinations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper(s)/Practical(s)/Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36% in the case of Practical) shall be taken into account in respect of such Paper(s)/ Practical(s)/ Dissertation/Viva Voce as are cleared after the expiry of the aforesaid period of three years: provided that: in case where a candidate required more than 25% marks in order to reach by him the minimum aggregate as many mark out of those actually secured will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the Office of

the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students (Correspondence course students included) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examination.

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate Candidates, the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

## HISTORY (ANNUAL SCHEME)

### ALTERNATIVE SCHEME

#### M.A. Previous

There shall be four papers. Each paper shall be of 3 hours duration carrying 100 marks.

- I. Evolution of Indian Society and Thought
- II. (i) Modern World (1919-1965)  
OR  
(ii) European History (1789-1848)  
OR  
(iii) European History (1848-1919)  
OR  
(iv) Social, Economic History of Europe, (1815-1945)
- III. (i) History of the Far East (1840-1950)  
OR  
(ii) History of Russia (1861-1952)  
OR  
(iii) History of U.S.A. (1776-1950)  
OR  
(iv) History of England (1760-1914)  
OR  
(v) Graeco-Roman Civilization  
OR  
(vi) Chinese Civilization  
OR  
(vii) Islamic Civilization  
OR  
(viii) Medieval European Civilization  
OR  
(ix) History of Science in Antiquity

IV. (i) History and Culture of Rajasthan (Earliest times to 1200 A.D.)

OR

(ii) History and Culture of Rajasthan (1200-1743 A.D.)

OR

(iii) History and Culture of Rajasthan (1743-1949 A.D.)

OR

(iv) History of the Marathas (1712-1818 A.D.)

OR

(v) History and Culture of the Deccan and South India (600-1300 A.D.)

## HISTORY (ANNUAL SCHEME)

### ALTERNATIVE SCHEME

#### M.A. Final

There shall be five papers. The fifth paper shall consist of either Viva-voce or any of the written papers. Each paper shall be of 3 hours duration carrying 100 marks each. The candidates have to choose either of the groups—Group A,B,C. The fifth paper is common to all the groups :

#### Group A (Ancient India)

Paper I —History of Ancient India: Sources, Problems and Interpretations (600 B.C. to 78 A.D.)

Paper II —History of Ancient India: Sources, Problems and Interpretations (78 A.D. to 650 A.D.)

Papers III & IV—Any two papers either out of the first 5 or last 5 of the following :

- (a) History of Education, Literature and Thought
- (b) History and Philosophy of Buddhism.
- (c) History of Political Ideas and Institutions.
- (d) Economic Life and Institutions.
- (e) Indian Culture abroad.
- (f) Indian Art, and Architecture.
- (g) History of Science and Technology
- (h) Epigraphy and Numismatics
- (i) Archaeology (including field Archaeology)
- (j) Historical Geography.

**Group B (Medieval India)**

Paper I. Problems and Interpretation of the History of India (1200-1526)

Paper II. Problems and Interpretation of the History of India (1526-1740).

Papers III & IV.—Any two of the following :

- ( i ) Administrative and Political Institutions of Medieval India.
- ( ii ) Economic and Institution of Medieval India.
- (iii) Social and Religious Life in Medieval India.
- (iv) Art and Architecture and Archaeology of Medieval India.
- (iv) Art, Architecture and Archaeology of Medieval India.
- ( v ) Historians of Medieval India.

**Group C (Modern India)**

Paper I. Problems and Interpretation of Indian History, 1756-1858

Paper II. Problems and Interpretation of Indian History, 1858-1950

Paper III & IV.—Any one of the following Options :

**Option (a) :**

Paper ( iii ) Political Awakening and National Movement 1838-1935

Paper ( iv ) Transfer of Power 1935-1948

**Option (b) :**

Paper ( iii ) Administrative and Constitutional Development, 1853-1950.

Paper ( iv ) Social and Economic History of India, 1750-1950

**Option (c) :**

Paper ( iii ) Social, Economic and Political Ideas-Rammohan to Tilak

Paper ( iv ) Social, Economic and Political Thought in the 20th Century.

Paper V—Viva-voce or any one of the following papers :

- ( i ) Theories and Methods of History
- ( ii ) Historiography
- (iii) History of Political Theory.

Syllabus

#### PAPER—I—Evolution of Indian Society & Thought

Formative Process of Indian Society--Varnasrama Dharma, Origin and growth of caste system, Outlook and influence of the Veda & Upanisads, Buddhism and Jainism--Classical Ideals and pattern--Manu Kalidasa, Sankara, the Sangama Age--the role of economic factors--Changes in trade industry and land ownership--influence of religious movements--Bhagavatism and Bhakti movement--Growth of imbalances and aristocratic refinement during medieval times--Nobility, Peasantry, Slavery--challenge from the West--religious and social reforms movements of the 19th century, emergence of the middle class and movements for social upliftment of the backward classes--Tradition and Modernity.

#### *Books recommended :*

Kane : History of Dharmasastra, Vol. II, Pt. I.

Hiriyanna : Outline of Indian Philosophy.

Fick : Social Organization in North-East India in Buddha's time.

G.S.P. Misra : The Age of Vinaya

G.S. Pande : Studies in the Origins of Buddhism.

Cultural Heritage of India (Ram Krishna Mission Institute of Culture, Calcutta) Revised edition,  
Vol. II, Pt. IV.

Vol. III Pt. II Ch. 12 pt. III Chaps. 22 and 25.

Vol. IV Pt. I, II, V & VI.

Upadhyaya : India of the Age of Kalidasa.

Nila Kantha Shastri : History of South India (relevant portion).

Lallanji Gopal : Economic life in northern India (A.D. 700 to 1200)

Yadav, B.N.S. :

Irfan Habib : Agrarian System of the Mughal India.

Bhandarkar R.G. : Vaishnavism, Saivism and other Minor Religious systems.

M.N. Srinivas : Social change in Modern India.

V.P.S. Raghuvansi : Indian Society in the 18th Century.

B.B. Misra : The India Middle Classes.

Malley O'L.S.S. Modern Indian and the West.

D.S. Sarma : Renaissance of Hinduism.

N.S. Bose : Indian Awakening in Bengal

V.C. Joshi (ed.) : Ram Mohan Roy and the Modernisation of India.

## Paper II—Modern World (1919-1965)

Treaty of Versailles and fourteen points-Reparations and Disarmament--French Search for security-Policy of appeasement and its consequences.

Foreign policies of Soviet Union, Germany, England, Italy and France during 1919-1939.

League of Nations--achievements and failures-Formation of the U.N.O.-its various agencies and work during 1945-65.

Foreign Policies of Super-powers and cold war after 1945.

The Far East--Japanese aggression over China-Chinese nationalist movement--Victory of Communism.

The Middle East and oil politics-the Non-Aligned movement-liberation of Africa.

### *Books recommended :*

Langsam : The World since 1919.

Gathorne Hardy : A Short History of International Affairs  
(Also in Hindi)

Palmer and Perkin : International Relations.

Spanier John : American Foreign Policy since World War II.

Mac. Nair & Lach : Modern Far Eastern International Relations

Michael Breecher : Indian Foreign Policy.

V.P. Dutt : China's Foreign Policy.

### OR

## European History (1789-1848)

The ancient regime--its nature--the philosophers and their role. Various explanations of the revolution--Social and Economic forces behind the Revolution.

The course of the French Revolution--rise of Jacobinism--Thermidorian reaction and the Directory.

Rise of Napoleon--His domestic and foreign policies--the Continental system--his ultimate failure--role of socio-economic forces--estimate of Napoleon's work--various interpretations. Vienna Congress and its work.

The Age of Metternich--The changing economic scene in Europe--Movements in Italy, Germany and the Hapsburg empire--Bourbon and Orleanist dynasties in France--Revolutions of 1830 and 1848.



*Books recommended :*

1. George Rude: Revolutionary Europe (1783-1815).
2. Leo Gershoy: The French Revolution and Napoleon.
3. David Thompson: Europe since Napoleon.
4. Hampson: Social History of the French Revolution.
5. G. Lefebvre: The French Revolution, 2 vols. (1962-64), English translation.
6. Mowat: A History of European Diplomacy (1815--1914) Relevant portions.
7. ....: Age of Metternich.
8. J.H. Clapham: The Economic Development of France and Germany, 1815-1914 (Relevant portions).
9. The New Cambridge Modern History  
Vol. VIII, IX, X and XI.
10. Artz: Reaction and Revolution
11. Dickinson, G. howes: Revolution and Reaction in Modern France.
12. Robertson, P.: Revolution of 1848 a : Social History.

## OR

## European History (1848-1919)

*Books recommended :*

- F. Lee Benns: Europe since 1870.  
 Fay: Origins of the World War  
 G.P. Gooch: History of Modern Europe (also in Hindi)  
 J.H. Hayes: Contemporary Europe since 1870.  
 Schapire, J.A.: Modern & Contemporary European History (1815-1952)  
 Taylor: Bismarck: The Man & the Statesman.  
 Taylor: Struggle for Mastery in Europe.  
 Brandenburg: From Bismark to the World War-I.  
 Robertson: Bismarck  
 Grant & Temperley: Europe in the 19th & 20th Century (Hindi)  
 Mowat: A History of European Diplomacy (1815-1914).  
 Derry & Jarman: The European World (1870-1945).  
 M.L. Sharm: Europe Ka Itihas (In Hindi)  
 David Thomson: Europe since Nepelean.  
 J.A.R. Marriot: The Eastern Question.  
 V.C. Pande: Europe Ka Itihas (in Hindi).

OR

Social and Economic History of Europe in the Nineteenth and Twentieth Century (Up to 1945) :

The economic heritage of the Napoleonic Era—Industrialisation in West Europe and the causes of its delay—the traditional agrarian economy of Central and Eastern Europe.

Protection and Free Trade in Britain and Europe.

The Economic Revolution of 1830-48 in Europe—the rapid expansion in industrial production and trade. The age of railway building and its effect on economic development. The Workers' unrest.

The growth of population and urbanisation in Europe—the Agrarian Revolution—the eastward spread of industrialisation—Bismarck's economic measures—Napoleon III and the economic development of France.

The trade Union movement in Britain and Europe—Early Socialism—the rise of the Working Class movement and Marxian Socialism—the urge to imperialism and the scramble for colonies.

Economic consequences of First World War—Depression of 1929-31.

*Books recommended :*

G. Lefebvre: The French Revolution, 2 vols., (1962-62) English Translation.

Norman Hampson: A Social History of the French Revolution (1963).

T.S. Ashton: The Industrial Revolution, 1760-1830 (1948).

J. Marriott: The French Revolution of 1848 in its Economic Aspect (2 vols., 1913).

W.O. Henderson: The Zollverein (1936).

J.M. Thompson: Louis Napoleon and the Second Empire (1954).

J.H. Clapham: The Economic Development of France and Germany 1815-1914 (1921).

G.D.H. Cole: A History of Socialist Thought (4 vols.)

G.D.H. Cole: The Meaning of Marxism.

David Thompson: Europe Since Napoleon (1957).

PAPER—III—History of the Far East  
1840-1950

The opium wars—Japing Rebellion—Scramble for China—Boxer Rebellion—Rise of Nationalism in China—Revolution of.

1911-12--Ideas and Role of Sun-yat-Sen-Chiang Kai-shek and his anti-communist policy--Consolidation of Communism--Civil war in China--Establishment of People's Republic--Ideas and Role of Mao Tse-tung.

Japan's contact with the West--Revolution of 1867. Abolition of Shogunate and Meiji restoration--Political Awakening and modernisation of Japan--Sino-Japanese and Russo-Japanese Wars--Emergence of Japan as a World Power in the 20th Century--Japanese Imperialism after 1919--Japan's defeat and surrender.

*Books recommended :*

1. Reisner and Fairban K.: East Asia, Vol. No. II.
2. H.F. Mac. Nair & D.F. Lach: Modern Far Eastern International Relations (D. Von. Nostrand, New York).
3. P.H. Clyde: The Far East (2nd Edition).
4. H.M. Vinacke: A History of the Far East in Modern Times. (Also in Hindi)
5. Chitosh Yanaga: Japan Since Perry (Mc-Graw Hill, New-York).
6. K.S. Lotourette: A short History of the Far East.

OR

**History of Russia  
(1860-1945)**

Reforms of Tsar Alexander II--Abolition of Serfdom, its result and effect on industrial development of Russia, Reform of local Government, Judiciary and Education. Domestic Policy of Tsar Alexander III and Nicolas II. The revolutionary democratis-ideas of Herzen, Chernyshevsky and Dobroliubov; the Narodniks and their contribution to the revolutionary movement; Causes of their failure.

The Rise of Social Democratic Party and the emergence of Marxist ideology in Russia. Plekhanov and Lenin's Contribution to the revolutionary movement. The split between the Bolsheviks and the Mensheviks at the London Party Congress of the R.S.D.L.P. in 1903. The Revolution of 1905-1907 Causes and character and reasons for its failure. The Reforms of Struve, the Duma and the causes of the failure of Representative Government in Russia.

Foreign Policy of Tsarist Russia. Russia's interest in the Balkans and the Near East. The Berlin Congress. Relations with Germany the Franco-Russian alliance. Expansion of Tsarist Russia in Central Asia (1864-1885). Policy towards Iran and Afghanistan. Rivalry with Britain causes and effect Tsarist Russia and the conquest

of the Caucasus and of Anglo-Russian rivalry. The Anglo-Russian Convention of 1907.

Russia in the Far East. Russia-Japanese war. Russian diplomacy in the Balkans on the eve of the First World War. The development of Art, Literature and Music in the later half of the 19th century. Russia during 'he first World War. The February and October Revolution 1917. Lenin's role and Ideas.

Lenin's New Economic Policy. Stalin and his policies. New Constitution of Soviet Union (1936). Soviet Foreign Policy and II World War.

*Books recommended :*

Summer: Survey of Russian History

Vernadshi: History of Russia. (Also in Hindi).

Riasanovsky, Nicholas V.: A History of Russia (O.U.P.)

Christopher Hill: Lenin and the Russian Revolution.

Pares, B.: History of Russia (London)

Rauch, G.V.: A History of Sovie\* Russia (London)

Harcave, Sidney: Russia--A History (London).

OR

History of U.S.A. (1860-1950)

American Independence and the growth of a new political system--expansion to the South and West--Economic clash with Europe--Growth of agriculture and industry.

Civil War and Reconstruction--Economic Revolution and Populist Movement.

American Imperialism (Mckenley and Theodor Roosevelt)  
Spanish-American War--U.S. Carribean and Latin American Policy.  
Open Door Policy.

The World War I and its aftermath--Neutrality, American entry into War--Wilson and Paris Peace Settlement. Hoover and Economic Depression.

Franklin D. Roosevelt--the New Deal--Roosevelt's Foreign Policy including the Latin American policy, American entry into the Second World War--American Diplomacy upto 1950-Truman Doctrine and Cold War.

*Basic Book :*

G.B. Parkes: The United States of America--a History (Indian-Edition).

*Books recommended :*

Morrison and Commager: The Growth of the American Republic.  
 L.J. Halle: Civilization and Foreign Policy  
 Harvey Wish: Contemporary America  
 Max Lerner: America as a Civilization  
 F.J. Turner: Frontier in American History.

OR  
**History of England (1760-1914)**

George III's personal rule--Responsibility of England for the War of American Independence--and the Napoleonic Wars.

Growth of Democracy--Reform Acts of 1832, 1867 and 1884.  
 Woman suffrage movement.

Growth of Liberalism and Free Trade--Chartism, Cooperation movement, Peel and Gladstone.

Growth of Imperialism--Palmerston, Disraeli, Imperialism in Africa.

British Colonial Policy--Durham Report, British North America Act--Policy of Joseph Chamberlain.

Growth of Socialist Ideas and Trade Union Movement, Birth of Labour Party.

Prelude to World War--Anglo-French, Anglo--Russian and Anglo-German Relations.

Edwardian Liberalism and the Parliamentary Act of 1911.

*Books recommended :*

E.L. Woodward: Age of reform (1815-1870)  
 R.C.K. Ensor: England (1870-1914)  
 J.A.R. Marriott: England since Waterloo (Also in Hindi)  
 J.A.R. Marriott: Modern England (1885-1945) (Methuen & Co., London) (Also in Hindi)  
 Pauline Greig: A Social and Economic History of Britain (1760-1950).  
 R.W. Seton Watson: Britain in Europe (1780-1914).  
 Cambridge History of British Policy Vols. II & III.  
 G.M. Trevelyan: British History in the 19th Century and after (1782-1919).

Ramsay Muir: A Short History of British Commonwealth. Vol.II  
 Paul Knapland: The British Empire (1815-1939).

OR

### Graeco Roman Civilization

#### *Books recommended :*

Bury: History of Greece

Mommsen: History of Rome.

Gibbon: Decline and Fall of the Roman Empire.

Will Durant: The Story of Civilization-The Life of Greece.

Will Durant: The Story of Civilization-Caesar and Christ.

A.H.M. Jones (ed.): A History of Rome Through the fifth century,  
 2 Vol.

Herodotus: Histories.

Plutarch: Lives of Noble Greeks and Romans.

Tacitus: The Germans.

The New Testament.

St. Augustine: The City of God.

Breasted: Conquest of Civilization.

OR

### Chinese Civilization

#### *Books recommended :*

Lin Yu-tang: Wisdom of China

Legge: The Chinese Classics (Analects of Confucious).

Fitzlerlad: China

Granet: Chinese Civilization

Fung Yu-lan: History of Chinese Philosophy

Creel: The Birth of China.

Creel: of Chinese Thought--from Confucious to Mao Tse-Tung.

OR

### Islamic Civilization

(Including a History of the Arabs)

The paper would cover the following broad areas :

1. Social and political condition of Arabia around 600 A.D. Prophet Muhammad's life and activities. History teaching and legacy.
2. The First four caliphs-schism in Islam.
3. Political Expansion of the Arabs under the Umayyids and growth of New political and economic institutions.
4. The Arab Empire under the Abbasids--its administrative and political structure.

5. The institution of the Caliphate--its nature and functions.
6. Evolution of Islamic Legal institutions. Codification of Quran, Hadith and the growth of the four schools.
7. Social life and institutions of the Arabs.
8. Islamic Art and Architecture--Cultural and Literary contribution of the Arabs.

*Books recommended :*

1. Hitti: History of the Arabs.
2. Will Durant: Age of Faith
3. O'Leary: How Greek Science passed to the Arabs.
4. Levy: Social Structure of Islam.
5. Rosenthal: Political Thought in Medieval Islam.
6. Amir Ali: Spirit of Islam.
7. : Life of Prophet Mohammed.
8. : Classical Islam.

OR

**Medieval Europe: 476 A.D. to 1453 :**

The paper would cover the following major areas :

1. The fall of the Roman Empire and its impact.
2. Rise of Teutonic Races and the contributions of Charlemagne.
3. Rise of Christianity--predominance of the catholic Church--Role of papacy in Medieval Europe--The Theory of Two Swords.
4. Role of Feudal barons--conflict between feudal and monarchical forces in England, France & Spain.
5. Social economic and administrative institutions during the feudal age.
6. Conflict between Islam and Christianity--the Crusades.
7. The Renaissance--Theories about its birth. New trends in literature and Art in the 15th century.
8. Growth of political institutions in England--Magna Charta and the war of Roses.

*Books recommended:*

Will Durant: The Age of Faith

Marc Bloch: Feudal Society 2 Vols.

Eileen Power: Medieval People.

H. Pirenne: History of Europe from the Invasions to the Sixteenth Century.

: Social & Economic History of Medieval Europe.

Huinzinga: The Waning of the Middle Ages.

Gibbon: The Decline and Fall of the Roman Empire.

Bagley: Historical Interpretations-Sources of English Medieval History.

David Herlihy (Ed.): Medieval Culture and Society 3 Vols.

OR

### History of Science in Antiquity :

Science and myths; Agriculture and discovery of metals: birth of civilization; State of Science in Indus Valley Civilization.

Development of Science in Archaic Civilizations; Egypt (Writing, Calendar, medicine and mathematics).

Development of Science in Archaic Civilizations: Mesopotamia (Writing, Calendar, medicine and mathematics).

Achievements of Greek Science; Cosmology, Astronomy, Mathematics and medicine.

Limitation of Greek Sciences and short survey of state of science in Ancient China.

J.D. Bernal: Science in History, Vols I, II.

J. Needham: Science and Civilization in China, Vol. I.

H. Hodges: Technology in the Ancient World.

B. Parrington: Greek Science.

### *Books for reference :*

R.G. Collingwood: Idea of Nature.

T.W. Africa: Science and the state in Greece and Rome.

S. Sambursky: Physics of the Stoics.

F. Cajori: A history of Mathematics (relevant portions).

### PAPER —IV History and Culture of Rajasthan Earliest Times To 1200 A.D.

### *Books recommended :*

P. Bhatia: The Parmars.

Rajasthan Through the Ages Vol. I.

Ganguly: The Parmars

D. Sharma: Early Chauhan Dynasties

Vaidya: History of Medieval India, Vol. I, III.

Raychaudhari: Political History of Ancient India (relevant portion).



Ojha: History of Rajputana (relevant portions).

Sankalia, H.D.: Prehistory and Protohistory of India & Pakistan  
2nd edn.

.....: Excavations at Ahar (Tambavati), Poona, 1968.

Banerjee, A.: Archaeology of South-Eastern Rajasthan, Varanasi.

Mishra, V.N.: Prehistory and Protohistory of Berach Basin.

Hanne Ryde: Excavations at Rangmahal.

## OR

### History and Culture of Rajasthan (1200-1743)

Sources—The political condition on the eve of Turkish invasion—Early Muslim settlements.

The role of Haroti kingdoms in medieval times—Emergence of Mewar as a dominant power—Contribution of Kumbha, Maharana Sangha—Rao Maldeo's internal and external policies. Resistance to imperial aggression—Chandra Sen and Maharana Pratap—Role of Raja Raisingh of Bikaner, Man Singh of Amber, Mirza Raja Jai Singh—Jaswant Singh of Marwar. Role of Durga Das—Maharana Raisingh—Sawai Jai Singh and his achievements—The succession disputes in Rajasthan and growing Maratha influence.

Administrative institutions—Economic Life and Social Structure, Literature—Art & Architecture—Trade and Commerce—Education.

Religious conditions in Rajasthan.

#### *Books recommended:*

James Tod: Annals and Antiquities of Rajasthan (Relevant portions).

Shyamal Das: *Vir Vinod* (Relevant portions).

G.M. Ojha: Rajputana ka Itihas (all volumes—Relevant portions)

Dashrath Sharma: *Rajasthan Through the Ages*

Dashrath Sharma: *Early Chauhan Dynasties*

G.N. Sharma: *Rajasthan Ka Itihas Part I*

: *Mewar and the Mughal Emperors*

: *Rajasthan Studies*

R.N. Prasad: *Raja Man Singh of Amber*

V.S. Bhargava: *Marwar and the Mughal Emperors*

H.C. Tikkiwal: *Jaipur and the Later Mughals*

V.S. Bhatnagar: *Life & Times of Sawai Jai Singh*

B.N. Rev: *Marwar ka Itihas*

H.B. Sarda: Maharana Kumbha.

G.N. Sharma: Social Life in Medieval Rajasthan.

G.N. Sharma: Aithihasik Srota.

Dr. K.S. Gupta: Mewar and Maratha Relations

G.R. Parihar: Marwar and the Marathas

S.R. Sharma: Maharana Raj Singh

Dr. R.P. Vyas: Maharana Raj Singh

Dr. Raghubir Singh: Durgadas Rathore.

Dr. M.L. Sharma: Kota Rajya ka Itihas Vol. I & II.

OR

Rajasthan History and Culture

(1743-1949)

**Maratha Supremacy and treaties with the British:**

Feudal Rivalries and invitation to Maratha leaders' interference--nature of Maratha influence--Economic condition of the Rajasthan in the later half of 18th century--Trade and agriculture--Holkar and Sindhia's activities--Pundari menace--Factors leading to the establishment of treaties with the British--Nature and consequences of the treaties with special reference to Kota, Mewar, Jodhpur and Jaipur.

General trend of British policy towards the States; Tod's, intervention in Rajputana (1818-22). Succession disputes in various states--Causes, nature and effects of the Uprising of 1857 in Rajasthan.

The growth of British influence--A.G.G. and his role--new Land revenue policy--Administrative re-organisation--Changing role of the nobility--Chamber of Princess with special reference to the role of Maharaja Ganga Singh of Bikaner and Maharaja Jai Singh of Alwar.

**Political Awakening and Prajamandal:**

Factors leading to political awakening in Rajasthan--Peasant and Bhil movement. Attitude of Congress towards the States; Formation and activities of Prajamandals and other political bodies in Rajasthan with special reference to Jaipur, Mewar, Alwar, Bharatpur and Jodhpur.

Revolutionaries in Rajasthan with special reference to Shyamji-Krishna Verma, Arjun Lal Sethi and his group; Kesri Singh Barhat and Pratap Singh Barhat.

Social and Economic Life--Education and Role of Arya Samaj; Walter Rajputra Hitkarni Sabha; Social reforms; Christian Missionaries and their activities. Important centres of Trade and commerce; Migration of Business community; Agriculture; Famine; Means of communication.

Transfer of Power in 1947 and Integration of Rajasthan.

*Books recommended :*

- Dr. R.P. Shastri: Jhala Zalim Singh  
 Dr. A.C. Banerjee: Rajput States and the East India Co.  
 Zabar Singh: The East India Company and Marwar.  
 N.R. Khargawat: Rajasthan in 1857  
 Dr. R.P. Vyas: Nobility in Marwar  
 Dr. Laxman Singh: Political and Constitutional Development in the Princely States of Rajasthan.  
 S.S. Saxena,  
 Dr. Padmaja Sharma: Bijolian Kishan Andolan Ka Itihas.  
 Prithvi Singh Mehta: Hamara Rajasthan  
 Ram Narayan Chaudhary: Hamara Rajasthan.  
 Syamal Das: Vir Vinod.  
 Suryamal Mishran: Vansh Bhaskar.  
 Bankidas Ki Khayat:

OR

History of Marathas

(1712—1818 A.D.)

*Books recommended :*

- M.G. Ranade: Rise of the Maratha Power  
 G.S. Sardesai: Main Currents of Maratha History  
 G.S. Sardesai: New History of the Marathas Vol. II & III.  
 G.S. Sardesai: Marathon ka Navin Itihas Vol. II & III (In Hindi)  
 N.G. Dighe: Baji Rao I and Maratha Expansion.  
 H.N. Sinha: Rise of the Peshwas.  
 Shejwalkar: Panipat: 1761 (Also in Hindi)  
 H.R. Gupta: Third Battle of Panipat  
 S.N. Sen: Administrative System of the Marathas.  
 P.C. Gupta: Baji Rao II  
 S.P. Varma: Maratha Diplomacy  
 Deodher: Nane Phadnis.

OR

**History & Culture of the Deccan and South India (600-1300 A.D.)**

Political conditions of the Deccan and South before the rise of the Chalukyas and the Greater Pallavas. Political History of the Western Chalukyas of Badami and Kalyani, Eastern Chalukyas, the Rastrakutas, Gangas, Hoyasalas and Kakatiyas; Pallavas, Cholas and Pandyas; Cultural achievements of the Deccan and South during the above period.

*Books recommended :*

- Majumdar, R.C. (ed.): Relevant chapters from *The Classical Age, The Imperial Kanauj & The Struggle for Empire*,  
 Sastri, K.A.N.: *History of South India*, Madras, 1955 (also Hindi)  
 Yazdani, G.: *History of The Deccan*, 2 vols.  
 Bhandarkar, R.G.: *Early History of the Deccan*, 3rd ed., Calcutta, 1928.  
 Aiyangar, S.K.: *Some Contributions of South India to Indian Culture*, 2nd Edn., Calcutta, 1942.  
 Srivastava, B.: *Dakshina Bharat Ka Itihasa* (Hindi).

*Reference Books :*

- Ganguly, D.C.: *The Eastern Chalukyas*, Banaras, 1937.  
 Venkataramanayya, N.: *The Eastern Chalukyas of Vengi*, Madras, 1950.  
 Altekar, A.S.: *Rashtrakutas and Their Times*.  
 Derrett, J.D.M.: *The Hoyasalas*, Oxford, 1950.  
 Coelho, William: *The Hoyasala Vamsa*, Bombay, 1950.  
 Gopalan, R.: *History of the Pallavas of Kanchi*, Madras.  
 Mahalingam, T.V.: *Kanchipuram in Early South Indian History*, Bombay, 1968.  
 Sastri, K.A.N.: *The Cholas*, Madras, 1955.  
                               : *Studies in Chola History & Administration*, Madras 1932.  
 Srivastava, B.: *Pallava Vamsa ki Adhara bhuta Samagri* (Hindi).

M.A. Final

Group-'A' (Ancient India)

Paper I —History of Ancient India, Sources, Problems and Interpretations (600 B.C. to 78 A.D.)

The Political condition of Northern India in 6th century B.C. Sixteen Mahajanpadas. The Republics and their polity. Rise of Magadhan Imperialism—Bimbisara, Ajatsatru and his successors. The Nanda dynasty, their chronology and achievement. The rise of Imperial ideal.

The Mauryan Empire—The sources of history. The origin of the Mauryas and early career of Chandragupta. The extent of Empire. Mauryan administration—Megasthenes's account and Kautilya's Arthashastra. Authenticity of Arthashastra. Bindusara.

The Inscriptions of Ashoka. Ashoka the Great—Kalinga war and conversion to Buddhism. The extent of Ashoka's Empire. The administrative innovations and their significance. Ashoka's Dharma—a critical study in the light of his Inscriptions. The successors of Ashoka and the downfall of Mauryan Empire—responsibility of Ashoka.

Pushyamitra Sunga—was there a Brahmanical reaction? The Indo-Greeks—Demetrius and Menander. The consequences of Indo-Greek rule. The Sakas—their system of administration. Kharvela—his date of accession, region and achievements.

The Satvahnas—Origin and original home. The rise of Satvahnas upto Satakarni I. Origin and Early history of the Kushans as Kujula Kadphises and Vima Kadphises. Date of the accession of Kanishka.

#### *Books recommended :*

K.A. Nilkantasastri (ed.): Comprehensive History of India, Vol.II.  
Majumdar & Pusalker: The History and Culture of India. Vol.II,  
The Age of Imperial Unity.

Raychaudhari, H.C.: Political History of Ancient India (Also in Hindi).

Mookerji, R.K.: Chandragupta Mauryas and His Times (Also in Hindi).

Nikant asastri K.A. (ed.): The Age of Nandas and Mauryas (Also in Hindi).

V.C. Pandey: Prachin Bhart ka Rajnitika Tatha Sanskritika Itihas, vol. I. (in Hindi).

Bhandarkar D.R.: Ashoka (Also in Hindi).

Mookerji R.K.: Ashoka (Also in Hindi)

Romila Thapar: Ashoka and the Decline of the Mauryas.

Narain A.K.: The Indo-Greeks.

Sudhakar Chattopadhyaya: Sakas in Ancient India.

Vachaspati Gairola: Arthashastra (Also in Hindi)

Mc Crindle: Ancient India as described by Megasthenes and Arrian  
Shamasatry: Kautilya's Arthashastra.

Paper II —History of Ancient India, Sources, Problems and Interpretations (78 A.D. to 650 A.D.)

Kaniska, The date of accession, extent of empire, achievements, Kanishka's successors. Western Ksatrapas—Nahapana, date, conquest; Rudradaman I, his conquests and achievements, extent of empire—Revival of the Satavahana power under Gautamiputra Satakarni. Saka-Satavahana struggle. The Vakatakas, their original home. Pravara Sena-I, Vakataka relations with Imperial Guptas.

The rise of the Imperial Guptas—Original home of the Guptas. Chandragupta I and his dominions. Samudragupta—His personality conquests and achievement. Historicity of Ramagupta.

Chandragupta II—Conquest of Central and Western India—Relations with the Vakatakas. Identification of King Chandra of Mehrauli Pillar inscription. Kumar Gupta I. Skandagupta. Budhagupta. Huna Invasion. Decline of the Gupta. Yashodharman.

Administration: Kushana Polity. Gupta Administration. Administration of Harsha.

Later Guptas and their relations with the Maukharis. Vardhanas of Thanewara—Harsha Vardhana his, conquests, extent of empire, his achievements. The account of Yuan—Chwang.

*Books recommended :*

Majumdar and Pusalker (ed.): The History and Culture of the Indian People Vo. II. The Age of Imperial Unity.

Majumdar and Pusalker (ed.): The History and Culture of the Indian People—Vol. II. The Classical Age.

R.K. Mookerji: The Gupta Empire.

S.R. Goyal: The History of the Imperial Gupta.

Majumdar and Altekar: The Vakataka Guptas Age (in Hindi)

D. Devahuti: Harsha: A Political Study.

U.N. Ray: Gupta Samrta va Unka Kala.

G.S. Chatterji: Harsha Vardhan (in Hindi)

S.R. Goyal: Prachin Bharat Ka Rajnitika Itihas Part-III.

P.L. Gupta: History of the Gupta Empire (in Hindi also).

Papers III & IV (a) –History of Education, Literature & Thought.

*Books recommended :*

Winternitz: A History of Indian Literature

Keith: Classical Sanskrit Literature

Krisna Chaitanya: A New History of Sanskrit Literature

Altekar: Education in Ancient India

Aurobindo: Fundamentals of Indian Culture.

Papers III & IV (b) –History and Philosophy of Buddhism.

Origins of Buddhism and the Fundamental Teachings of Buddha.

The Historical aspect of the development of Buddhism--the Buddhist Sangha; the Councils; Origins of Sects.

The Origins of Mahayana and its salient features.

Madhyamika System and the Yogacara system.

The Buddhist Tantrika school and the decline of Buddhism.

*Books recommended :*

Coomaraswamy and I.B. Honner: Living Thoughts of Gotama, Buddha (Introduction by Coomaraswamy).

Stcherbatsky: The Central Conception of Buddhism.

Narendra Deo: Bauddha Dharma Darshan.

Conze: History of Buddhism, its Essence and Development.

Mrs. Rhys Davids: Buddhism (H.U.L.)

Bapat (Ed.): 2500 Years of Buddhism.

Papers III & IV (c) —Political Ideas and Institutions of ancient India.

Sources, concept of Political Science and its significance. The State: Origin, nature and functions.

Monarchy: King's duties and Ideals. Nature and checks on Monarchy.

Republican Polity and Local Government.

Theories of Public Finance and Inter-state Relations.

History of Administration: Vedic Polity, Mauryan Administration and Gupta Administration.

*Books recommended:*

K.P. Jayaswal: Hindu Polity.

Altekar: State and Government in Ancient India.

Saleatore: Ancient Indian Political Thought and Institutions.

V.P. Varma: Studies in Hindu Political Thought.

Kangle: The Kautilya's Arthashastra.

Ghoshal, U.N.: A History of Indian Political Ideas.

N.C. Bandhopadhyaya: Development of Hindu Polity and Political Theories.

Papers III & IV (d)—Economic Life and Institutions.

(i) Ancient Indian economic thought.

(ii) Economic systems and Institutions: The Land-categories, measurement, ownership, revenue and other taxations, land grants, landed aristocracy; Animal Husbandry and Agriculture--irrigation, manuring, crops, agricultural technology; Industries--resources, workers; Trade and Commerce--internal, external, direct-indirect trades; Labours--slave, hired, forced; Corporate Economic life--guilds (*sreni* and *Samgha*, etc.); Barter, currency and usuary.

(iii) Survey of Economic Life. Urban economy of the Indus Civilization; Social and rural economy of the Vedic Age; Industrial and urban economy from 6th century B.C. to the beginning of Christian era. Economic life and foreign trade (specially Roman) in Pre-Gupta period; Economic life and progress during Gupta Period; Early mediaeval economic life and sea-trade; Temple economy of South India.

*Books recommended :*

Aiyangar, K.V.R.: *Aspects of Ancient Indian Economic Thought*, Second ed. Varanasi, 1965.

Bose, A.N.: *Social and Rural Economy of Northern India*

Bandyopadhyay, N.C.: *Economic Life and Progress in Ancient India*, 1925.

Maity, S.K.: *The Economic Life of Northern India*, Second edition.



Gopal, L.: *Economic Life of Northern India*, (700-1200 A.D.).

Srivastava, B.: *Trade & Commerce in Ancient India*.

Majumdar, R.C.: *Corporate Life in Ancient India*, (also in Hindi).

*Reference Books :*

Das, S.K.: *Economic History of Ancient India*, 1928.

Ghoshal, U.N.: *Agrarian system in Ancient India*, 1930.

: *Contribution to the History of Hindu Revenue, System.*

Buch, Maganlal, A.: *Economic Life in Ancient India*, 2 vols.

Chakravarty, A.: *Trade & Commerce of Ancient India*.

Mookerji, R.K.: *Indian Shipping*.

Das, D.R.: *Economic History of the Deccan*.

Motichandra: *Sartrhavaha* (Hindi).

Saran, P.: *Labour in Ancient India*.

Gupta, K.M.: *Land Systems in South India*, (800-1200 A.D.), 1933.

Pran Nāth: *Economic Conditions of Ancient India*, 1929.

Samaddar, J.: *Economic Conditions of Ancient India*.

Ghosh, A.: *The City in Early Historical India*, 1973.

Yadava, B.N.S.: *Some Aspects of Society and Culture in the 12th Century*, Allahabad. 1973.

Papers III & IV (e)—Indian Culture Abroad

*Books recommended :*

R.C. Majumdar: *Hindu Colonies in the Far East*

P.C. Bagchi: *India and Central Asia*.

Legge: *Travels of Fai Hien*.

Watters: *On Yuan Chwang's Travels in India*.

Takakusu: *I-tsing's record of the Buddhist religion*.

Paper III & IV(f)—Ancient Indian Art and Architecture:

Characteristics of Indian Art: Development of Art in Indus Valley—Main features of wooden architecture in the Vedic age.

Study of Art and architecture in the Mauryan period—Palaces Pillars, Caves and Folk Sculptures (Yaksas)—Development of art in

the Sunga and Satavapana period--Origin of stupa architecture--Study of Stupas at Bharhut, Sanchi and Amravati.

Architecture of Buddhist caves--Hinayana and Mahayana phases--Development of plastic art in the Kusana period--study of Mathura and Gandhara schools. Origin of Buddha Image.

Gupta Art--A study of sculptures, Ajanta paintings and the Temples. Origin and classification of Hindu temple styles.

Post Gupta temple architecture--North India--A study of Orissa, Khajuraho and Abu groups of temples. South India--Rock Cut temples at Mahabalipuram Kaliasa Temple at Ellora and development of Pallave temples.

*Books recommended :*

Coomaraswamy, A.K.: A History of Indian and Indonesian Art

Rowland, B.: The Art and Architecture of India.

Kramrish, Stella: Hindu Temples (2 vols.)

Saundra Rajan: Indian Temple Styles.

Agrawala, V.S.: Bharatiya Kala.

Sivaramamurti, C.: Amaravati Sculptures in the Madras Government Museum.

Joshi, N.P.: Mathura kala

Douglas Barvet & Basel Gray: Paintings of India.

Ray, Niharranjan: Mauryan and Post-Mauryan Art.

Brown, P.; Indian Architecture (Buddhist and Hindus).

Krishna Deo: Uttara Bharata ke Mandira.

Ghosh, A.: Ajanta Murals.

*Group 'A' :*

Papers III & IV (g)—History of Science and Technology.

Study of Scientific ideas in the Early Vedic literature regarding Astronomy, Medicine and Mathematics; Classification and rise of systematic science in the Sutra period with special reference to geometry.

Rationalization of Scientific ideas: Origin of the world according to *Nyaya Vaisesika*; Scientific institutions in the *Arthashastra*.

Contribution of Buddhists and Jains towards the scientific development. Writings of Charka and Susruta.

Development of Mathematics and *Rasayana* in classical period  
Study of Astronomy--*Pancha Siddhantas*; Contribution of Varahamihira, Arya Bhatta and Brahmagupta.

## Causes of arrest of development of science in Ancient India.

*Books recommended :*

- Satya Prakash: *Prachina Bhartiya Vajjnani ka Parampara*.  
 Bose, Ray & Subrayyapa: *Concise History of Indian Sciences*.  
 P.C. Ray: *Hindu Chemistry*  
 B.N. Seal: *Positive Sciences of the Ancient Hindus*.  
 Betty Heimann: *Facets of Indian Thought*  
 S.N. Das Gupta: *History of Indian Philosophy* (Relevant portion).  
 Muni Sri Nagraj: *Jaina Philosophy and the Modern Science*.  
 Mrs. Rhys Davids: *The Birth of Indian Psychology and its Development in Buddhism*.  
 A.N. Singh & B.B. Datta: *Hindu Mathematics*.  
 Gorakh Prasad: *Bhartiya Jyotisha*.  
 Stcherbatasky: *Buddhist Logic, I*.

## Papers III &amp; IV-(h): Epigraphy &amp; Numismatics

- Note* :—(1) The students shall be expected to do field/practical work regarding the preparation of stampages from the original inscriptions and scientific analyses of coins.
- (2) There shall be a question regarding the decipherment of epigraphs (only in Mauryan Brahmi script)—10 marks and coins (only from the types prescribed in the syllabus 10 marks).

## Section A : Epigraphy (40 marks) :

- I. Antiquity of writing in India; origin of Brahmi and, Kharoshthi scripts.
- II. Inscriptions prescribed for study :
  - (1) Rock-edict II, XII & XIII of Asoka, *SI*.
  - (2) First Separate Kaling Edict of Asoka, *SI*.
  - (3) Pillar Edict VII of Asoka *SI*.
  - (4) Bhabru edict of Asoka *SI*.
  - (5) Besanagar Garudapillar Inscription of Heliodorus, *SI*.
  - (6) Hathigumpha Inscription of Kharavela, *SI*.
  - (7) Nasik Cave Inscription of Queen Balasri in the 19th Renal year of Pulumavi, *SI*.
  - (8) Junagarh Rock Inscription of Rudradaman, *SI*.

- (9) Allahabad Pillar Inscription of Samudragupta, *CII, III*.
- (10) Meharauli Iron Pillar Inscription of Candragupta *CII, III*.
- (11) Aphasad Stone Inscription of Adityasena, *CII, III*.
- (12) Banskhera Copper Plate of Harsha, *EI IV*.
- (13) Bijolia Inscription of Vikrama Samvat 1226, *Epigraphia Indica*, vol. XXVI.

**Section 'B': Numismatics (40 marks) :**

1. The antiquity and origin of coinage in Ancient India.
2. Punch-marked and cast-copper coins-salient features.
3. Indo-Greeks: Salient features; coin-types of Diodotus, Demetrius and Menander.
4. Local and Tribal coins: Salient features; coin types of Kausambi, Yaudheyas, Kunindas and Panchala.
5. Saka-Pahlavas: coin-types of Maues and Gondophernes.
6. Kushanas: Gold coin types of Kanishka and Huvishka.
7. Guptas: Salient features of Gold, Silver and copper coinage of Guptas: Coin-types of Chandragupta I, Kacha, Samudragupta (standard, Asvamedha, Lyrist and Tiger-slayer types only), Chandragupta II (Lion-slayer, King and Queen on Couch and *Chakravikrama* types only), Ramgupta, Kumaragupta I (Rhinoceros-slayer, Kartikeya and *Apratigha* types only) and Skandagupta (king and Lakshmi type).

*Books recommended :*

**Section 'A' :**

Pandey, R.B.: *Indian Palaeography*.

: *Asoka Abhileka* (Hindi)

Ojha, G.H.: *Bharatiya Prachin Lipimala* (Hindi)

Sircar, D.C.: *Select Inscriptions*, Second edition.

*Corpus Inscriptionum Indicarum*, vol. I to III, relevant articles.

*Epigraphia Indica*, relevant articles.

**Section 'B' :**

Bhandarkar, D.R.: *Ancient Indian Numismatics*, 1921.

Chakraborty, S.K.: *Ancient Indian Numismatics*.

Allan, J.: *Catalogue of Coins in the British Museum* (Ancient India) relevant portions.

Narain A.K.: *The Coin-types of the Indo-Greek Kings*, relevant portion.

Whitehead, R.B.: *Catalogue of Coins in the Panjab Museum, Vol.I.*

Altekar, A.S.: *Guptakalina Mudrayen* (Hindi).

: *Corpus of Indian Coins*, vol. IV, Gupta Coinage.

### Reference Books :

#### Section 'A' :

Barua, B.M.: *Inscriptions of Asoka*

Dasgupta, C.C.: *The Development of Kharoshthi script.*

Dani, A.H.: *Indian Palaeography.*

#### Section 'B' :

*Journal of Numismatic Society of India,*

*Numismatic Chronicle*

*Numismatic Supplement to Journal of Royal Asiatic Society, Bengal*  
(relevant articles).

Papers III & IV --(i):—Archaeology (Including Field Archaeology) :

*Note* :—(i) The students shall be expected to do field/practical work/excursions to archaeological sites and Museums.

(ii) The paper shall be divided into three section A, B (each carrying 20 marks) and C (Carrying 60 marks)

(iii) The students will be expected to answer at least one question each from sections A and B, two question from section 'C'.

#### Section A: Theories and Methods of Field Archaeology (20 marks) :

Concepts of archaeology: Archaeology in relation to other social, natural and pure sciences; Exploration, Lay-out, excavation. Stratigraphy, Recording and Dating.

#### Section B: Outlines of Prehistory (20 marks) :

Salient features of various stone Ages (Early, Middle, Late & Neolithic) with reference to distribution, tool-type, techniques, ecology and life of the people.

#### Section C: Protohistoric & Early Historical Archaeology (60 marks)

*Note* : Emphasis shall be given to archaeological problems.

(i) Preharappan chalcolithic Cultures of Baluchistan, Sindh

and North-western India (Kile-Gul-Mohammad, Anjira, Amri, Kotdiji, Kalibangan).

- (ii) Harappan and Late Harappan civilization : salient features origin and authorship, extent, chronology, devolution (Harappe, Mohonjodaro, Kalibangan, Lothal, Rangapur, Rupar).
- (iii) Post Harappan Culture—sequence in Panjab, Haryana, Northern Rajasthan and Gangatic Doab: Problems pertaining to O.C.P. & Copper-Heards, Black-and-Red Ware, P.G.W. and N.B.P. Ware Culture Early Historical Levels—a brief survey (Rupar, Hastinpur, Kausambi, Rangmahal).
- (iv) Culture-Sequence in Western and Central India (Rangpur Ahar, Navdatoli).
- (v) Culture-Sequence in the Deccan (Prakash, Nevasa, Nasik, Jorwe). Megalith Types and related material-culture in the Deccan and South.
- (vi) Culture-Sequence in Eastern India (Pandu Rajar Dhibi, Mahishdal, Sisupalgarh).

#### *Books recommended :*

- Wheeler, R.E.M.: *Archaeology from the Earth*, Penguin Books.  
 : पृथ्वी से पुरातत्व (Hindi Translation).  
 : *Early India and Pakistan*, London, 1959.  
 : *The Indus civilization*, 3rd edition, 1968, Supplement to Cambridge History of India.
- Sankalia, H.D.: *Prehistory and Protohistory of India & Pakistan*, Second edition, Poona, 1974.
- Allchin, F.R. & B.: *The Birth of Indian Civilization*, 1968.
- Fairservis, W.A.Jr.: *The Roots of Ancient India*, New York, 1971.
- अग्रवाल, धर्मपाल, पन्नालाल : भारतीय पुरातिहासिक, पुरातत्व सङ्ग्रह, 1975 :  
 यपल्याल, किरन कुमार व अन्य : सिन्धु सभ्यता ।
- Deo, S.B.: *Problems of South Indian Megaliths*, Dharwar, 1973.

#### *Reference Books :*

- Sankalia, H.D. : *Stone Age Tools*, Poona, 1964.
- Sinha, B.P. (ed.) : *Potteries in Ancient India*, Patna.
- Rao, S.R. : *Lothal and the Indus civilization*, Bombay, 1973.

- Piggott, S. : *Prehistoric India*, Pelican Books.
- Agrawal, D.P. : *The Copper & Bronze Age in India*, New Delhi, 1971.
- Banerji, N.R. : *Iron Age in India*.
- Gordon, D.H. : *The Protohistoric Background of Indian Culture*, Bombay, 1958.

- ( i ) Excavation Reports on the sites mentioned in the syllabus.
- ( ii ) *Indian Archaeology—A Review*, New Delhi, relevant portions.
- (iii) *Ancient India*, New Delhi, relevant portions
- (iv) *Puratattva* (Bulletin of the Indian Archaeological society)—relevant articles, specially No. 5.
- ( v ) *Pakistan Archaeology*, relevant articles.

Papers III & IV (j)—Historical Geography :

1. Vedic Geography—Original home of the Aryans—Geographical horizons of the Vedic texts.
2. Geography of Early Buddhism and Jainism—Buddhist and Jain Cosmography. Identifications of the Janapadas, cities, towns, rivers and mountains known from the early Buddhist and Jain literature.
3. Puranic and Epic Geography—Cosmography, Geographical divisions of Bharatvarsa, Identification of Janapadas known from the epics and the Puranas.
4. India as described by the Greeks and the Chinese.
5. Trade-routes and means of conveyances in ancient India—Trading Centres and sea-ports.

*Books recommended :*

- Raychaudhary, H.C.: *Studies in Indian Antiquities*.
- Law, B.C.: *Geographical Essays*, Vol. I.  
 „ *Early Mid-Indian Ksatriya Tribes*.  
 „ *Historical Geography*.
- Dey, N.L.: *Geographical Dictionary*.

Sircar, D.C.: Studies in the Geography of Ancient & Mediaeval India.

Motichandra: Sarthavaha

Roy, U.N.: Cities and Towns in Ancient India.

### GROUP—'B'

Paper I—Problems and Interpretation of the History of India 1200-1526,

Political condition of India and Central Asia during the last quarter of 12th Century.

Establishment and expansion of the Delhi Sultanate—the causes of Turkish success—the phase of conquest and reconquest—Khilji Imperialism—Resistance by Hindu/Rajput rulers—Attempts at Stability and Consolidation.

Theory of Kingship—Balban and Alauddin Khilji—The Iqta System—Military organisation—Economic Policy of Alauddin Khilji.

Political and Religious policies of Mohammad Tughlaq—Rebellions and disorder during his reign—Firoz Tughlaq's Policy of appeasement—its consequences.

The disintegration of the Central authority and the rise of the provincial powers.

The problem of the Western Frontier. The Mongal Invasion—Their effect on the Sultanate. Sultanates' relations with countries outside India—The nature of Afghan sovereignty—Decline of the Delhi Sultanate.

### *Books recommended :*

Comprehensive History of India.

Habibullah, A.B.M.: Foundation of Muslim Rule in India.

K.S. Lal: History of the Khiljis (Also in Hindi).

Mahdi Hussain: Tughlaq Dynasty

Ishwari Prasad: History of the Qarunnah Turkin India.

Jauhari: Firoz Tughlaq.

R.C. Majumdar (ed.): The Delhi Sultanate.

S.B.P. Nigam: Nobility under the Sultans of Delhi

Yusuf Hussain: Indo-Muslim Polity (Turco-Afghan Period)



- A.L. Srivastava: Akbar the Great, Vol. I (2nd ed. Agra, 1972)  
 V.A. Smith: Akbar the Great Mughal (2nd edn. Indian Reprint Delhi, 1958).  
 K.R. Qanungo: Sher Shah and his Times (Calcutta, 1965) (Also in Hindi).  
 Beni Prasad: History of Jehangir (Allahabad, 1962).  
 B.P. Saksena: Shah Jahan (In Hindi also).  
 J.N. Sarkar: History of Aurangzeb (Vol. I-V) (Also in Hindi).  
                   : Fall of the Mughal Empire, Vol. I (Reprint, Delhi, 1971).  
 Athar Ali: Nobility under Aurangzeb (Also in Hindi).  
 Satish Chandra: Parties and Politics at the Mughal Court.  
 William Irvine: Later Mughals (Reprint, Delhi, 1971).  
 Elliot and Dowson: History of India as told by its own Historians (Vol. IV-VII).  
 R.P. Tripathi: Rise and Fall of the Mughal Empire (Also in Hindi)

सतीश चन्द्र : उत्तर मुगलकालीन भारत ।

Papers III & IV--(i);

Administrative and Political Institutions of Medieval India. :

The origin and development of Islamic Polity—Nature and character of the Delhi Sultanate.

Theory of Sovereignty—Central government, growth of the Wizarat—functioning of the other state departments—Provincial and local government.

Taxation and land revenue, with special reference to the period of the Khiljis and the Tughluqs.

Military organization (1200-1526).

The Afghan Institutions--The Lodies and the Surs.

Mughal theory of sovereignty--The central administrative structure--provincial and local government.

Military administration and the Mansabdari system of the Mughals--Land Revenue system and taxation--Growth of coinage and currency. Justice in Islamic law--administration of Justice in Medieval India (1200-1740): judicial machinery at various level and its working; law and procedure, crime & punishment; laws relating to Non-Muslims.

Role of the Nobility and the Ulama in the growth of administrative institutions.

*Books :*

1. I.H. Qureshi: The Administration of the Sultanate of Delhi.
2. The Administration of the Mughal Empire.
3. R.P. Tripathi: Some aspects of Muslim Administration in India.
4. S.B.P. Nigam: Nobility under the Sultans of Delhi.
5. S.R. Sharma: Mughal Government and Administration.
6. J.N. Sarkar: Mughal Administration.
7. Ibn Hassan: The Central Structure of the Mughal Empire.
8. P. Saran: Islamic Polity.
9. The Provincial Government of the Mughals.  
(Also in Hindi)
10. U.N. Day: The Government of the Delhi Sultanate.
11. W.H. Moreland The Agrarian system of Muslim India
12. Irfan Habib: The Agrarian system of Mughal India  
(1556-1707).
13. Wahed Hussain: The administration of Justice During Muslim Rule in India.
14. Athar Ali: Mughal Nobility under Aurangzeb (Also in Hindi).
15. Abdul Aziz: The Mansabdari System & the Mughal Army
16. Noman Ahmad Siddiqi: Land Revenue administration under the Mughals.
17. A.B. Pandey: Society & Government in Medieval India.
18. R.P. Khosla: Mughal Kingship and Nobility.

Papers III & IV--(ii);

**Economic Life and Institution in Medieval India :**

**The agrarian System:--**

Land utilization, irrigation system, principal crops and crop patterns, trends in agricultural production.

Village classes; fixation and settlement patterns; Nature of Land Rights and the problem of ownership of agrarian land.

The concept of "The Village Community"

The Land Revenue System:—Revenue assignments and grants; working of the Jagirdari system—The Ijara System; Role of Cash Nexus in the agrarian Economy of Mughal India.

### Non-agricultural Production:-

Mines, Minerals, fisheries and forests. Rural and Urban handicrafts.

Industrial organization: Manufacturing—techniques, urban wages.

### Trade and Trade Routes :-

Foreign Trade--The volume and nature of exchange--Foreign trading communities and their role in the internal and overseas trade.

Nature of the development of Rural and Urban Trade Centres—Important sea ports of India. Means of Transport—Trade Routes—Land, River and Sea routes—Custom and Transit Dues—The attitude of the State towards the Trading class—Organization of India Commerce. Markets—Weights and measures—Currency and Banking—Price Structure.

Urbanization—Growth of Towns in Medieval India. The standard of life of the different social classes.

### Books :

1. W.H. Moreland: The agrarian System of Moslem India
2. „ India at the Death of Akbar.
3. „ India from Akbar to Aurungzeb
4. K.M. Ashraf Life and Conditions of the People of Hindustan. (Also in Hindi).
5. Irfan Habib: The agrarian System of Mughals.
6. S.S. Kulshresta: Development of Trade and Industry under the Mughals.
7. Chicherov: India-Economic Development in the 16-18th Centuries.
8. J.N. Sarkar: Economic Life of Mughal India.
9. Noman Ahmad Siddiqi. Land Revenue Administration under the Mughals.
10. Yusuf Hussain: Glimpses of Medieval Indian Culture
11. D. Pant: Commercial Policy of the Mughals.
12. Brij Narain: Indian Economic Life, past and present.
13. H.K. Naqvi: Urban centres and Industries in upper India 1556-1803.
14. „ Urbanization and Urban centres under the Great Mughals.

Papers III & IV--(iii);

### Social and Religious Life in Medieval India :

Caste structure and the development of caste system--Varna-ashram in the Medieval period--Aboriginal tribes--Untouchability, Functioning of social institutions like family and marriage.

The role of the Nobility and the Ulama--Landed aristocracy--development of the Feudal System--main features of Feudal society.

Position of women--Slavery--Hindu and Muslim social laws and customs.

Village community and the peasantry--the Hindu and Muslim masses--social values and standard of living.

Religious life--Bhakti movement and Sufism--Domestic life--Manners and customs--Means of recreation.

### *Books recommended :*

K.M. Ashraf: Life and Conditions of the People of Hindustan, (2nd ed., Delhi, 1970).

B.N.S. Yadava: Society and Culture in Northern India in the 12th Century (Allahabad, 1973).

Sochau: Alberuni's India, 2 vols., London, 1910.

Yusuf Hussain: Glimpses of Medieval Indian Culture (Bombay, 1962).

J. Jolly: Hindu Law and Customs (Calcutta, 1928).

K.A. Nizami: Some Aspects of Religion and Politics in India, during the 13th Century (Bombay, 1961).

R.B. Pandey: Hindu Samskaras, Banaras, 1949.

P.H. Prabhu: Hindu Social Organization, Bombay, 1954.

R.S. Sharma: Indian Feudalism, Calcutta, 1965.

A.L. Srivastava: Medieval Indian Culture (Agra, 1964). (Also in Hindi).

A. Yusuf Ali: Medieval India, Social and Economic condition (London, 1932).

P.N. Chopra: Some Aspects of Society & Culture during the Mughal Age (Agra, 1963).

Moreland: India at the death of Akbar; From Akbar to Aurangzeb

Tara Chand: Impact of Islam on Indian Culture.

P. Toma : Hindu Religion, Manners and Customs (Bombay.)

Papers III & IV—(iv);

### ART, ARCHITECTURE AND ARCHAEOLOGY

The salient features of Sarcenic, Hindu and Indo-Muslim styles of Architecture—The Provincial styles of Architecture during the Sultanate period (Rajasthan, Mandu, Gujarat, Jaunpur). The Mughal architecture; the provincial and regional schools (Rajasthan, Gujarat, Malwa, Deccan).

Painting during the early Medieval period with special reference to illustrated Jain manuscripts. Synthesis of the Indian and Persian styles of Painting—evolution of the Mughal painting—Provincial and regional styles.

The art of sculpture during the Medieval period—main trends.

Archaeological sites and excavations of Material Culture and life during early Medieval and Mughal periods as revealed from the archaeological excavations.

#### *Books recommended :*

- Perey Brown: Indian Architecture, vol. II (Islamic Period), 4th ed., Bombay, 1964.
- Perey Brown: Indian Paintings under the Mughals (Oxford 1924).
- Fergusson: A History of Indian and Eastern Architecture.
- Moti Chandra: The Technique of Mughal Painting (Lucknow, 1949).
- Saraswasti, S.K.: Indo-Islamic Architecture, 2 vols.
- Din Dayal Gupta: Ashta-Chhap aur Vallabh Sampradaye. Cultural Heritage of India (relevant portions).
- Tara Chand: Impact of Islam on Indian Culture.
- S.A.A. Rizvi: Moslem Revivalist Movements in Northern India in the 16th & 17th Centuries (Agra, 1969).
- Abul Fazl: Ain-i-Akbari, vol. III.
- Hazari Prasad Dwivedi: Madhyakalin Dharmesadhana (Allahabad 1952).
- R.B. Pandey: Hindu Samskaras (Banaras, 1949).
- P.H. Prabhu: Hindu Social Organization (Bombay, 1954).

Papers III & IV—(v);

### HISTORIANS OF MEDIEVAL INDIA

Evolution of Muslim Historiography—main trends and characteristics.

Court historians of Sultanate period--Hasan Nizami, Minhaj-us-Siraj; Ziauddin Barani--evaluation of their works and styles.

Poet historians--Amir Khusrau, Isami. Autobiographies of Babar and Jahangir--Court historians of the Mughal period: Abul Fazl and Abdul Hamid Lahauri--evaluation of their works and styles.

Independent historians: Badaoni, Khafi Khan, Bhimsen.

European Travellers--Bernier, Tavernier, Manucci.

Regional historiography--Nainsi, Karnidan.

*Books recommended :*

Mohibbul Hasan: *Historians of Medieval India*, (Meerut, 1968).

P. Hardy: *Historians of Medieval India*.

Mukhia: *Historians and Historiography during the reign of Akbar* (Delhi, 1979).

Wahid Mirza: *Amir Khusrau*

Elliot and Dowson: *History of India as told by its own Historians*, vols. II-VI (Hindi translations available).

Babar Nama (tr. Mrs. A.S. Beveridge).

Tuzuk-i-Jahangiri (tr. Rogers & Beveridge) (Also in Hindi).

*Works for further reading :*

Franz Rosenthal: *A History of Muslim Historiographies* (Leiden, 1968).

Abul Fazl: *Akbar Nama* (tr. A.S. Beveridge)

Amir Khusrau: *Khazain-ul-Futuh* (tr. Prof. M. Habib)

Isami: *Futuh-us-Salatin*, 3 vols. (tr. Mahdi Hussain)

G.H. Ojha: *Ojha Nibandha Sangraha*

Muhta Nensi: *Nensi ri Khyat*, 3 vols. (Raj. Or. Research Inst.)

*GROUP—'C'*

*Paper I :*

**Problems and Interpretation of the History of India—1756-1858.**

Establishment of British rule in Bengal—Acquisition of Diwani—Clash with the Marathas—Evaluation of the role of Mahadji Sindhia and Nana Phadnis. Failure of the Marathas—Haider Ali and Tipu Sultan.

Evolution of British policy towards Indian States and Mughal Empire—its various stages—doctrine of lapse and annexation of Oudh.

The Rise of the Sikhs in the latter half of the 18th century. Ranjit Singh's military achievements and administration—Punjab after 1839--British policy and annexation of Punjab.

The Frontier policy—Northern, North-Western, and North-Eastern frontiers-Nepal, Afghanistan and Burma--conquest of Sind.

Growth of Civil, Judicial and Land revenue administration--Problem of Indianisation of the administrative machine--Regulating and Pitt's India Act--The Charter Acts of 1813, and 1853.

Influence of Utilitarian and Evangelical ideas on British Indian Administration.

The outbreak of 1857--its causes, nature and results--various theories of its origin--Govt. of India Act, 1858.

*Books Recommended :*

1. R.C. Majumdar: I Maratha supremacy  
II British Paramountcy and Indian Renaissance. Bhartiya Vidya Bhawan's History and culture of the Indian People, Bombay 1965.
2. Prasad, B. Bondage and Freedom Vol. I 1757-1858
3. Dodwell, H.H.(ed.) The Cambridge History of India Vol. V.
4. Sardesai, G.S.: Main Currents of Maratha History
5. Deodhar: Nana Phadnis
6. Stokes, E.: English Utilitarians and India.
7. Sinha, N.K.: Ranjit Singh
8. Sinha, N.K.: Haider Ali.
9. Chaudhary, S.B.: Theories of the Indian Mutiny.
10. Civil Rebellion in India during 1857-58.
11. Prasad, S.N.: Paramountcy under Dalhousie
12. P.N. Khera : British policy towards Sindh.
13. Jones, M.: Warren Hastings and Bengal
14. Sardesai, G.S.: New History of the Marathas, Vol. II., chapters XVI vol. III (Also in Hindi.)
15. Sheikh Ali, B.: Haider Ali
16. M.S. Mehta: Lord Hastings and the Indian states.
17. Lee Warner: The Native States.

## Paper II—

## Problem and Interpretation of Indian History—1858-1950:

The aftermath of 1857--Changes in British imperialistic policy--Changed importance of Indian States--Stages in the growth of imperial policy towards them--paramountcy and its impact.

The Secretary of State and India Council--their role--SOS vis-a-vis the Governor General--The man on the spot theory.

Liberal and Conservative trends in British Indian administration (1876-1905)--administrative and financial decentralisation--Problem of Indianisation of administrative services--Racial discrimination. and Judicial administration--British attitude to Indian society and attempts at social reform.

Economic imperialism--drain of wealth from India--Policy towards Industrialisation and Railway development--Irrigation, land revenue administration and Famines--Import-Export trade.

Genesis of nationalism--Origin of the Indian National Congress--Various theories--Liberal and extremist schools. Revolutionaries and the terrorists--Elite politics and Mobilisation of masses. Gandhian technique of Satyagraha. Imperialist devices to obstruct Constitutional advance--encouragement to communal and sectional interests.

Communalism and its genesis--Role of English officials and Muslim leaders--Opposition to Indian National Congress--Simla Deputation, Lucknow Pact and McDonald Award--Concept of a separate state for Muslims and Partition of the country.

## Transfer of Power and the new Constitution of India

*Books recommended :*

1. Dilks, David: Curzon in India, 2 vols, London 1969.
2. Swinton, Arthur: North-West Frontier 1839-1917, London, 1967.
3. Carrington, C.E.: The British Overseas: Exploits of a Nation of Shop-keepers.
4. Gopal S. : The Viceroyalty of Lord Ripon, 1880-1884, London, 1953.
5. Gopal, S.: British Policy in India, Camb., 1965.
6. Majumdar, R.C.: History & Culture of Indian People. Vidya Bhawan Series, Vol. IX & X, Relevant portions and vol. XI.
7. Coupland, R.: The Indian Problem, 1833-1935.



8. Philips, C.H. (ed.): The Evolution of India, 1858-1947.
9. Bearce: British attitude towards India.
10. Moore, Charles: Liberalism and India.
11. Singh, V.B.: Economic History of Modern India.
12. Tara Chand: History of Freedom Movement in India Vol. II, III & IV.
13. Roy, Somnath: Indian politics and constitutional development.
14. Prasad, B.: Origins of Provincial autonomy
15. Singh, H.L.: Problems and Policies
16. Jain, M.S.: The Aligarh Movement

Papers III & IV-option (a) :

Paper—(III) Political Awakening and National Movement 1838-1935

Early political associations and their activities (1838-1884), Surendra Nath Banerjee, A.O. Hume, W.C. Banerjee and their activities--various theories about the origin of the Indian National Congress--British attitude to the nationalist movement--Controversy over primacy of social questions--Indian Social Conference and its contribution to political awakening. Muslim opposition--Birth of the Extremist Movement--Role of Tilak--The terrorist and the Revolutionary movements--Home Rule Movement and Annie Beasant--Non-cooperation and Civil Disobedience Movements--Round Table Conference and Poona Pact. The idea of federation.

*Books recommended :*

1. Majumdar, B.B.: Indian Political Associations and reform of Legislature, 1818-1917.
2. Banerjee, S.N.: A Nation in the Making.
3. Heimsath, C.H.: Indian Nationalism and Hindu Social Reform
4. Seal A.: Emergence of Indian Nationalism.
5. Tripathi, A.: The Extremist Challenge.
6. Argov.: Moderates and Extremists.
7. Wolpert: Tilak and Gokhale
8. : Morley and India 1906-1910.
9. R.C. Majumdar: History of Freedom Movement, vols. I-III.
10. Tarachand: History of Freedom Movement in India' vol. I to IV (in Hindi also).
11. Jain, M.S.: Aligarh Movement.
12. Kabir, Humayun: Muslim Politics, 1905-1942.
13. Robinson: Separatism among the Indian Muslims.
14. Ram Gopal: Indian Politics (in Hindi also).

15. Grover, B.L.: British Policy towards Indian Nationalism.
16. Mehrotra, S.R.: Emergence of Indian National Congress.
17. Brown, J.M.: Gandhi's rise to power in Indian politics 1915-22.

#### Paper (IV)—TRANSFER OF POWER 1935-47

The paper is meant to be a detailed and exhaustive study of the period. It would include a critical study of the role and activities of the three main parties at the national scene—the Muslim League, The Indian National Congress and the British Government.

#### *Books recommended :*

1. Lumby, E.W.R. : The Transfer of Power in India, 1945-47.
2. Menon, V.P. : The Transfer of Power in India.
3. Philip, C.H. & M.D.  
Wainwright (ed.) : The Partition of India ( 1935-47 ).
4. Hudson, H.V. : The Great Divide.
5. Tarachand : History of Freedom Movement in India, Vol. IV.
6. Low, D.A. : Congress and the Raj.
7. Veerathappa, K : British Conservative Party and Indian Independence—1930-47.

#### Papers III & IV-option (b) ;

#### Paper (III)—Administrative and Constitutional Development 1853-1950

Evolution of administrative system during 1772-1833, Growth of centralisation. Introduction of English law and the judicial system—its impact on the socio-economic system. Recruitment to Civil services—Patronage vs. competitive system—racial superiority. Question of Indianisation and the age limit controversy. Three categories of Civil Services. Beginnings of decentralisation—administrative and financial—Local self government—devolution and delegation of authority; Growth and organisation of Central Secretariat—Provincial and other rivalries—Role of bureaucracy in the 20th century.

The growth of Legislative Council and the Role of non-official members—1853-1909—Main features and the working of Acts of 1909, 1919, 1935, Various Commissions to suggest constitutional reforms—Round Table Conferences—Concept of Federation—Question of the

Indian States Representation--Principle of Communal electorates--Provincial autonomy. Constitutional development during 1945-47, Constituent Assembly and a critical study of the Constitution of 1950.

*Books recommended:*

B.M. Mishra: Administrative History of India.

B. Prasad: Origins of Provincial Autonomy

C.H. Phillips: Evolution of India and Pakistan, 1858-1947.

B.N. Pandey: Introduction of English Law in India

Coupland: The Constitutional Problem.

A.B. Keith: Constitutional History of India.

M.V. Pylee: Constitutional Government in India.

Courtney Ilbert: Government of India.

V.C.P. Choudhary: Administration of Lord Lytton.

H.L. Singh: Problems and Policies.

Spangenberg: British Bureaucracy in India.

**Paper (IV)—Social and Economic History of India 1750-1950.**

*Outline:*

Social life in the later half of the 18th century—Cottage industries and their decline--Land Revenue Administration and main features of Permanent, Ryotwari and Mahalwari settlements--Impact of free trade policy on industry and agriculture.

English legal system and its impact--Growth of English education--Christian Missionaries and their role--Growth of press--Social mobility and rise of middle classes--Social and religious reform movements--Social Legislation--Upliftment of depressed classes.

Railways--Guarantee System and its economic impact--Textile and Jute Industry--Problem of rural indebtedness and famines--Drain of wealth and its implications.

Peasant movements and trade unionism. Foreign trade and British attitude to the policy of protection.

*Books recommended:*

Gadgil, D.R.: Industrial Evolution of India in recent times.

Datta, R.C.: Economic History of India, vol. I & II.

Chandra, B.: Rise and Growth of Economic Nationalism in India  
(Also in Hindi).

Naoroji, Dadabhai: Poverty and Un-British Rule in India.

Ganguli, B.N.: Modern Indian Economic Thought.

Bhatia, B.M. : Famines in India: A Study in Some Aspects of  
the Economic History of India,  
1860-1945, London, 1963.

Guha, Ranjit: A Rule of Property for Bengal.

Mishra B.B.: The Indian Middle Classes.

Desai, A.R.: Social Background of Indian Nationalism.

Datta, K.K.: Survey of Social and Economic History of India.

Sinha, N.K.: Economic History of Bengal, Vols. I, II & III.

R.C. Majumdar: British Paramountcy and India Renaissance, vol.  
IX & X, Pt. II.

Ingham, K.: Reformers in India, 1793-1833.

Natrajan, : Century of Social reform in India.

O'Malley L.S.S. (ed.): Modern India and the West.

Bose, N.S.: Indian Awakening and Bengal, Cal., 1976.

Natrajan, J.: History of Indian Journalism.

Papers III & IV—option (c):

Paper (i)—Social Economic and Political Ideas—Rammohan to Tilak

Ram mohan Roy, Bankim Chand Chattopadhyya, Dayanand Saraswati, Bhartendu Harish Chandra, Sayyid Ahmed Khan, Vivekanand, Gokhale, Ranade, Tilak, Dadabhai Naoroji. B.C. Pal, Aurobindo and Lala Lajpat Rai.

*Books recommended :*

1. Majumdar, B.B.: History of Political Thought from Rammohan to Dayanand.
2. Joshi, V.C. (ed.): Rammohan and the Process of Modernization, New Delhi, 1975.
3. Heimsath, Charls H.: Indian Nationalism and Hindu Social Reform, Princeton, 1969.
4. Banerjee, S.K.: Bankimchandra: A Study of His Craft, Cal. 1968.
5. Appadorai (ed.): Documents on Political Thought in Modern India, Vol. I & II.
6. Jain, M.S.: Adhunik Bharat men Muslim Rajnaitik Vicharak
7. R.P. Masani: Dadabhai Naorojee.
8. Parvate: Lokmaya Tilak.

9. Parvate: Gokhale.
10. Joshi, V.C.: Lajpat Rai: Autobiographical Writings.
11. Verma, V.P.: Modern Indian Political Thought (in Hindi also)
12. Wolpert, S.: Tilak and Gokhale.
13. Roman Rolland: Life of Vivekanand.
14. Narvane: Modern Indian Thought.
15. Ganguli, B.N.: Modern Indian Economic Thought
16. Lajpat Rai : Young India.

Papers III & IV--option (c);

Paper (IV)—Social, Economic and Political Thought in the 20th Century.

The paper would be in two sections and would include a study of the ideas of the following leaders:

#### Section-'A'

Madan Mohan Malviya, Tej Bahadur Sapru, Maulana Muhammad Ali, Iqbal, B.R. Ambedkar, Jay Prakash Narain.

#### Section-'B'

Gandhi and Jawaharlal Nehru.

#### *Books recommended :*

1. Kriplani, J.B.: Gandhi, his life and thought.
2. Jain, M.S.: Adhunik Bharat Men Muslim Rajnaitik Vicharak.
3. Nanda, B.R.: Mahatma Gandhi, a biography.
4. Prasad, Ganesh: Nehru; a study in liberal humanism.
5. Adi H. Doctor,: Anarchist Thought in India (Asia Publishing House, 1964).
6. Low, D.A.: Sounding of Modern Indian History.
7. Verma, V.P.: Modern Indian Political Thought (Also in Hindi)
8. Bose, N.K.: Studies in Gandhism (Cal. 1962).
9. Nanda, B.R.: The Nehrus: Jawaharlal Nehru.
10. J.P. Narayan: *Towards Struggle*.
11. Dhawan: Political Thought of Gandhi.
12. Gangoli: Gandhian Social Thought.
13. Bose & Patwardhan: Gandhi in Indian politics.
14. Appadorai, A.: Indian political thinking.
15. Keer, Dhananjay: Dr. Ambedkar--life and mission.

16. M.N. Das: The political philosophy of Jawahar Lal Nehru.
17. Karan Singh: Aurobindo.

Paper V Either (i) Theories and Methods of History :

Nature and Scope of History—Science or Art—

Historical Explanation—Linear and Cyclical theories—Idealistic and Positivistic viewpoints.

Problem of Objectivity—Relation between fact and interpretation—Causation and prediction—possibilities of 'laws' Dialectical method in history. History—Role of Individual—the Great Man Theory.

*Books recommended :*

1. E.H. Carr: What is History?
2. W.H. Walsh: An Introduction to the philosophy of History.
3. Collingwood: The Idea of History
4. Elton: The Practice of History.
5. Pandey, G.C. (ed.): Itihas—swaroop evam Siddhanta.

Or (ii)—Historiography:

Historiography in ancient civilizations: Indian, Chinese, Islamic.

Graeco—Roman historiography. The beginnings, Herodotus & Thucydides.

Mediaeval historiography and St. Augustine.

Historiography during the Renaissance and Enlightenment--New trends. Spengler, Toynbee, Marx.

*Books :*

Collingwood: *Idea of History*  
Bury: *Ancient Greek Historian*  
Thompson.: *History of Historical writings.*  
Tholfsen: *Historical Thinking.*  
Gooch: *History and Historians of 19th Century.*

(iii)—History of Political Theory

The paper would include a study of leading ideas of the following political philosophers:

Plato, Aristotle, St. Augustine, St. Aquinas, Hobbes, Locke, Rousseau, J.S. Mill. Hegel, Green, Marx, Lenin and Gandhi.

*Books recommended :*

1. Sabine: *A History of Political Theory* (Also in Hindi)
  2. Macllwain: *Growth of Political thought in the west.*
  3. Vaughan: *Studies in the History of Political Philosophy:*  
before and after Rousseau.
  4. Barker: *Greek Political Theory* (Also in Hindi).
  5. Gopi Nath Dhawan: *Political Philosophy of Gandhi.*
  - 6, Barker :*Political Thought in England (1884-1914).*
  7. Green : *Lectures on the Principles of Political Obligation.*
  8. Catlin: *History of Political Philosophers.*
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MINUTES OF THE SPECIAL MEETING OF THE BOARD OF  
STUDIES IN THE CHEMISTRY HELD ON 26TH JUNE,  
1979 AT 9.00 A.M. IN THE UNIVERSITY OFFICE,  
JAIPUR.

Present :

1. Prof. K.C. Joshi (Convener)
2. Shri M.L. Sharma
3. Shri K.P. Bhargava
4. Prof. J.P. Tandon (Special invitee)

N.B. :—The minutes were also circulated to the other members of the Board and did not make any comments.

1. With reference to the Academic Council Res. No. 16 dated 15.5.1979 and the Syndicate Res. No. 2 (iii), dated 26/27th May, 1979, the Board *recommended* the courses of study for the M.Sc. Previous Examination of 1980 and 1981 and Final Examination of 1981 and 1982 according to Annual Scheme of Examination (*Vide Appendix-I*)

2. With reference to the Academic Council Res. No. 10 dated 1st June, 1979 and Syndicate Res. No. 3, dated 16th June, 1979 the Board *resolved to recommend* that the word "Unit" be deleted in all the Syllabi of the Under-Graduate and Post-Graduate Examinations in the subject and accordingly 1979 editions of the Syllabi prescribed for the various examination of 1981 of the above Subject be got printed.

The meeting ended with a vote of thanks to the chair.

Convener



## SCHEME OF EXAMINATION

## M.Sc. CHEMISTRY EXAMINATION

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-Voice (Wherever permitted)		100 marks
Dissertation/Thesis/		100 marks
Survey Work/Field Work, if any :—		

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part ( wherever prescribed ) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical (s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination not withstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below

First Division	60%	of the aggregate marks
Second Division	48%	taken together of the Previous and the Final Examinations.
Third Division	36%	

4. If a candidate clears any Paper (s) /Practical (s)/ Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% ( 36% in the case of Practical ) shall be taken into account in respect of such Paper (s)/Practical (s)/Dissertation/

Viva Voce as are cleared after the expiry of the aforesaid period of three years : provided that; in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many mark out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the Office of the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students ( Correspondence course students included ) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examinations.

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate Candidates, the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

### SCHEME OF EXAMINATION

#### M.Sc. (Previous) Examination, 1980.

- Paper I —Inorganic Chemistry
- Paper II —Organic Chemistry
- Paper III —Physical Chemistry
- Paper IV —Analytical Chemistry  
—*Practicals.*

#### M.Sc. Final Examination, 1981.

- Paper I —Inorganic General
  - Paper II —Organic General
  - Paper III —Physical General
  - Paper IV —Either Paper
    - (a) Inorganic special
    - (b) Organic special
    - (c) Physical special
- Practicals.*

## M.Sc., PREVIOUS EXAMINATION

## Paper I—Inorganic Chemistry

3 hours duration

100 marks

1. *Nuclear and Radiochemistry :*

Finding energy, theories of nuclear stability, various nuclear models, Nuclear reactions involving charged particles, gamma rays and neutrons. Nuclear fission and fusion. Production of radio isotopes and labelled compounds and their applications.

2. *Chemistry of transuranic elements :*

Production of transuranic and super heavy elements; usual and unusual oxidation states of actinides. Spectral and magnetic properties, Comparison of actinides with lanthanides.

3. *Chemistry of Silicon :*

Structure, preparation and properties of silanes, alkyl silanes and silicon nitrogen compounds. Stereochemistry of silicon compounds.

## 4. (a) Synthesis, structure and reactions of boron hydrides and borazines

(b) Modern theories of acids and bases including hard and soft acids and bases.

5. *Reaction in Non-aqueous solvents :*

Properties of non-aqueous solvents and nature of reactions there in; Co-ordination model. Study of reactions in Sulphuric acid, dimethyl sulphoxide, bromine trifluoride and dinitrogen tetroxide.

6. *Theory of atomic spectra :*

Types of spectra (Absorption, emission and X-ray spectra). Electron spin, angular momentum vectors. Russell saunders coupling. Interpretation of spectra and magnetic properties of atoms.

7. *Theories of Bonding :*

Application of variation principle to the bonding in  $H_2$  and  $H_2^+$  systems. Hybridization of orbitals. Molecular

orbital theory of  $H^{+2}$  and  $H_2$  molecules (LCAO methods); self consistent field methods. Approximate methods for simple homocyclic molecules,  $CO$ ,  $CO_2$ ,  $N_2O$ ,  $Co_3^{-2}O_8$  electron deficient molecules, interhalogen compounds and fluorides of xenon. Bonding in delocalised electron systems.

8.

Crystal field, Ligand field and MO Theory of coordination compounds.

9.

(a) *Lattices and space groups* :—Lattice energy of solids. Energy band theory of solids (metals, semiconductors, ionic crystals and molecular compounds). Relationship of energy bands to electrical, optical and magnetic properties of solids.

(b) Structural study of inter-metallic, interstitial compounds, defect structures and non-stoichiometric compounds.

10.

(a) *Chemistry of condensed phosphates* :—Cyclic and chain polyphosphoric acid and their salts : synthesis, properties complexation and hydrolysis reactions.

(b) Organo-phosphorous compounds : Reactivity, Stereochemistry and mechanism of reactions.

## Paper II—Organic Chemistry :

3 hrs. duration

100 marks.

1.

(a) *Bonding in organic molecules*—Hybridisation; Bond lengths, bond energies and bond angles; Hydrogen bonding and its effect on properties, Resonance and Aromaticity.

(b) *Structure and Reactivity*—(a) Acids and Bases (b) Inductive effect, mesomeric effect and electromeric effect (c) Hyperconjugation (d) Steric effect (e) Concept of tautomerism.

## 2. Organic Reaction Mechanism :

(General Considerations) Types of Organic Reactions; Introductory ideas on Energetics of reactions; Carbonium ions (including rearrangements) and Carbanions.

3. *Mechanistic Studies of the following*

- (a) Nucleophilic substitution at Saturated Carbon Atom;  $SN_1$  and  $SN_2$  reactions; Stereochemical considerations, Allylic Rearrangement, Neighbouring group participation.
- (b) Nucleophilic Substitution at an unsaturated carbon Atom.
- (c) Electrophilic and Nucleophilic Substitution in Aromatic Systems.

4. *Stereochemistry :*

Principle of molecular asymmetry; Optical activity of compounds containing asymmetric carbon atoms and no asymmetric carbon atoms; Absolute configuration, R-S Nomenclature; Geometrical isomerism of compounds containing carbon-carbon, carbon-nitrogen and nitrogen-nitrogen double bonds; Stereochemistry of substituted cycloalkanes.

## 5.

- (a) *Cycloalkanes*—Recent methods of preparing large ring compounds, Muscone and Civetone; Stability and Conformations.
- (b) *Polynuclear Aromatic Hydrocarbons*—Anthracene and Phenanthrene; Carcinogenic hydrocarbons.

## 6.

- (a) *Heterocyclic compounds containing one hetero atom*, Quinoline, Isoquinoline, Acridine, Pyrones, Indole.
- (b) Amino Acids and polypeptides : methods of synthesis; properties and relationship to proteins.

7. *Alkaloids.*

Occurrence; Classification: General methods of isolation and determination of structure; Detailed study of the following.

Hygrine. Nicotine, Atropine, Cocaine, Papaverine.

8. *Synthetic and natural dyes.*

Classification; General study of synthetic dyes (with special reference to Vat dyes Cyanine dyes); Alizarin and Indigo; Colour and chemical constitution.

9. *Carbohydrates.*

Classification, General methods of structure determination; Structure and configuration of maltose, lactose, sucrose. Structural study of starch and cellulose; Elementary ideas of photosynthesis of carbohydrates.

10. *Terpenes.*

Occurrence, classification, general methods of isolation and structure determination; alicyclic and monocyclic terpenes, Citral, Geraniol, Limonene, Terpineol, Menthol.

## Paper III—Physical Chemistry

3 hrs. duration :

100 marks

1. *Chemical Kinetics;*

- (i) Complex Reactions, Parallel, Opposing and Consecutive reactions and reactions involving equilibria, Induced Reactions with examples, induction factor, induction period. Effect of substituents on the rates, Linear free energy relationships.
- (ii) *Chain Reactions*, Characteristics general kinetics, steady state concept. Discussion of hydrogen bromine reaction. *Catalysis and Mechanism* (a) General catalysis (b) Acid base catalysis, acidity functions (c) Enzyme catalysis.

2. *Electrochemistry :*

- (i) Diffusion and ionic mobility, solutions of diffusion equation, defects of Arrhenius theory, Activity and activity coefficient, standard states, methods of determination of activities by vapour pressure, freezing point, boiling point, emf and osmotic pressure methods for electrolytes, and non-electrolytes, Ionic strength, Correction for more concentrated solutions, results, salting out effect.
- (ii) Debye Huckel or ion cloud theory solution of Poisson and Boltzman equation, Debye-Huckel limiting law, theory of more concentrated solutions, extension of Debye Huckel theory, theory of conductivity (Onsager's equation including mathematical deductions).

3. *Quantum Mechanics :*

- (i) Basic principles of quantum theory, postulates of quantum theory, Schrodinger wave equation;

Physical interpretation of wave functions, normalisation and orthogonality of wave functions, Operators, angular momentum commutation rules, eigen values.

- (ii) Solution of Schrodinger wave equation for some simple systems—particle in a box (one and three dimensions), particle in a circle and on a sphere, harmonic oscillator, hydrogen atom—complete solution radial and angular dependence of wave functions, hydrogen molecule ion, hydrogen molecule.

#### 4. *Thermodynamics.*

- (i) Thermodynamic properties, partial molar quantities and their physical significance, chemical potential and its variation with temperature. Fugacity, definition, methods of determining fugacities including generalised methods, its variation with temperature.
- (ii) J.T. effect, sign and magnitude of J.T. effect, thermodynamic equation of states, expression for J.T. effect and inversion temperature for a vander Waal's gas, and generalised expression for J.T. effect and inversion temperature using reduced equation of state.

#### 5. *Spectroscopy.*

- (i) Brief outline of ultraviolet and visible spectroscopy as given in B.Sc. syllabi, experimental technique, classification of electronic transitions  $\sigma \rightarrow \sigma^*$ ,  $n \rightarrow \sigma^*$ ,  $\pi \rightarrow \pi^*$  and  $n \rightarrow \pi^*$ . Spectral conjugations, its application in structure elucidation, in study of keto-enol tautomerism, cis-trans isomerism, stereochemistry, dissociation constants of acids and bases.
- (ii) (a) Brief outline of infrared spectroscopy as given in B.Sc., Syllabi, experimental technique, harmonic and anharmonic vibrations, force constants, characteristic group frequencies and their intensities, and factors influencing these in different type of organic compounds, hydrogen bonding. Infrared spectra of inorganic ions and coordination compounds, Rotational spectra of HCl gas.
- (b) Raman spectra, experimental technique, application in elucidation of molecular structure.

6. *Phase rule.*

Phase rule study of the following condensed systems of two components—

- (a) Formation of compound with congruent melting point, system is completely miscible in the liquid state.
  - (i) Diphenylamine and benzophenone.
  - (ii) Ferric Chloride and water.
- (b) Formation of compound with incongruent melting point. Benzene and picric acid.
- (c) Distillation of binary liquids —
  - (i) Miscible liquids-azeotropic mixture.
  - (ii) Partially miscible liquids.
  - (iii) Immiscible liquids.
- (d) Construction of phase diagram of two components from the given data.

7. *Photochemistry.*

Absorption of light, Grothius Draper Law, Einstein's law to photochemical equivalence, photochemistry of the dimerisation of anthracene and  $H_2 + Cl_2$ ,  $H_2 + Br_2$  and  $H_2 + I_2$  reaction, fluorescence, phosphorescence, photosensitisation and chemiluminescence, elementary idea of flash photolysis and its applications.

## Paper IV—Analytical Chemistry :

3 hrs. duration

100 marks

1 : *Principles of volumetric analysis :*

Equivalent weights, conductometric and potentiometric titrations; titration curves. Theories of acid base, adsorption, and redox indicators.

2 : Complexometric titrations, metal indicators. Use of  $KBrO_3$ , Ceric sulphate, Cr (VI), (V), (II) and Ti (III) in volumetric analysis.

3 *Treatment of quantitative data :*

Precision of measurement, significant figures, absolute and relative errors. Methods of average and least squares, Calculation of slope, intercept, and standard and average



deviation. Application of Newtonian method for solving polynomial approximations.

4 : *Brief theory, experimental technique and application of following :*

- (i) Colorimetry.
- (ii) Flame photometry.
- (i.i) Solvent extraction processes.

5 : *Estimation of functional groups :*

Principles of estimation of following: Hydroxy, Aldehyde, Ketone, Enol, Carboxy, Amino, Acetoxy, Alkoxy, Terminal methylene and C—methyl groups, unsaturation and Grignard's reagent (titration methods).

- 6. (a) Organic reagents in chemical analysis. Use of important organic reagents, spot tests.
- (b) Spectrophotometric titrations, nephelometry and turbidimetry.

7 : *Chromatography.*

Brief theory, experimental techniques and application of (i) TLC (ii) Column chromatography (iii) Paper chromatography (iv) Electro chromatography (V) Ion exchange chromatography and (vi) Gas chromatography.

8 : *Brief theory experimental technique and applications of*

- (i) Polarography and amperometry (ii) Chronopotentiometry (iii) Coulometry.

9 :

Brief theory, experimental technique and applications of

- (i) Activation analysis (ii) Atomic absorption spectroscopy.

10 :

Brief theory, experimental technique and applications of (i) calorimetry—enthalpy titrations (ii) Thermogravimetric analysis, differential thermal analysis.

### PRACTICALS

Practical—200 marks

### INORGANIC

1. Semi-micro qualitative analysis of mixture of moderate complexity, containing not more than seven radicals from the

list of radicals prescribed for the B.Sc. examination with the addition of the following :

Arsenate, chromate, dichromate, permanganate, cyanide, thiosulphate.

*Note* :—Candidates will be expected to have analysed atleast twelve mixtures.

*Quantitative Analysis :*

2. (a) Standard gravimetric and volumetric methods of determining the following basic and acid constituents from pure substance and from their mixture, not involving the separation of more than two constituents : Cu, Ag, Ca, Ba, Mg, Zn, Al, Pb, Ni,  $\text{NH}_4$ , arsenite, sulphate, thiosulphate, chloride, bromide, iodide, carbonate.
- (b) Available chlorine in bleaching powder and available oxygen in hydrogen peroxide and in pyrolusite.
- (c) Alloys : Silver coin, nickel coin, brass.
- (d) Minerals : Dolomite, galena.

*Note* :—Candidates will be expected to have analysed at last three mixtures under (a) and at least two under each (b), (c) and (d),

3. Simple preparations such as :

- (i) Ferrous sulphate from Kipp's waste.
- (ii) Silver nitrate from silver residues.
- (iii) Carbonate tetramine cobalt (IV) nitrate.
- (iv) Sodium cobaltinitrate.
- (v) Sodium tetrathionate.
- (vi) Cuprous chloride.
- (vii) Cuprous thiourea complexes.
- (viii) Sodium ferroxalate.
- (ix) Reinecke's salt.
- (x) Potassium chromiocynate.

*Note* :—Candidates will be expected to have prepared at least six compounds.

## ORGANIC

1. Preparation of simple compounds involving not more than two stages.
2. Identification of two simple compounds in a mixture and preparation of their derivatives.
3. Estimation of  $\text{-COOH}$  group : Determination of saponification number and iodine number of oils.

## PHYSICAL

1. Molecular weight determination by Vapour density method.
2. Molecular weight determination by elevation in B.P.
3. Electrical conductivity of solutions and conductometric titrations (acid-alkali precipitation mixture of halides.)
4. Partition coefficients—to determine the distribution coefficient, complex formation.
5. Colloids—Preparation of  $\text{As}_2\text{S}_3$  sol and verification of Schulze Hardy's law.
6. Solubility of solids in liquids.
7. Refractive indices of liquids, solutions and mixture of liquids.
8. Viscosity of liquid and liquid mixtures.
9. Surface tension of liquids and solutions.
10. Heat of neutralisation.
11. Freundlich's adsorption isotherm.
12. Polarimetry-inversion of cane sugar.
13. Hydrolysis of ethylacetate—velocity constant, energy of activation; comparison of strength of acids.
14. Potentiometric titrations : acid-base, oxidation reduction.

15. Molecular weight by depression in freezing point method.
16. Transition temperature.

### M.Sc. FINAL EXAMINATION

#### Paper I—Inorganic General.

3 Hours Duration

100 Marks.

1 :

Spin-orbit coupling. Energy level diagrams for various symmetries. Orbital splitting and thermodynamic properties of transition metal compounds.

2 :

Electron absorption spectra of inorganic complexes. Interpretation of spectral and magnetic properties of metal complexes. Nephelauxetic series.

3 :

Phosphonitrilic polymers, siloxanes and heteropolymers based on boron, silicon and sulphur.

4 :

(a) Metal chelate polymers.

(b) Stabilization of unusual and mixed, oxidation states of transition metals such as Ag, Au, Cr, Mo, Fe, Mn and Ni in their compounds.

5 :

Chemistry of complex compounds in solutions, methods of studying complex equilibria in solution. Stability constants (theoretical treatment) and their determinations (spectrophotometric and potentiometric methods and treatment of data). Factors affecting the stability of complexes, Mixed ligand complexes.

6 : *Complexes of acceptor ligands.*

Carbenyls, nitro-yls, cyanides and isocyanides, synthesis, structure and reactions.

7 : *Organo-metallic Compounds of transition metals.*

Simple alkyls and aryls, derivatives of olefins, acetylenes, allylenes and cyclopentadiene, fluxional organometallic molecules.

8 :

Chemistry of metal alkoxides, and double alkoxides, siloxides and  $\beta$  —diketonates.

9 :

Metal complexes of beta ketoamines, Schiff bases and ligands containing sulphur and selenium.

10 :

Co-ordination compounds in biological systems. Chemistry of metallo enzymes. Role of trace elements in animal and plant life. Recent advances in the chemistry of fixation of nitrogen.

### Paper II—Organic General

3 Hrs. duration

100 marks.

1 : *Methods for determining reaction mechanism.*

A general study of reaction intermediates with particular reference to carbenes, benzyne and nitrenes.

2 : *Elimination Reactions.*

Eliminations  $E_1$  &  $E_2$ , cyclic elimination; Elimination v/s. Substitutions, Addition reaction : (a) nucleophilic, (b) electrophilic, (c) nonpolar.

3 : *Nucleic acids.*

Primary and Secondary structures; synthetic attempts; General study of recent advances in biochemical genetics.

4 : *Proteins.*

Classification, properties; secondary and tertiary structures of proteins; oxytocin and insulin.

5 : Uses of the following reagents in synthetic chemistry  
Lithium aluminium hydride, sodium borohydride, Raney nickel, liquid ammonia, periodic acid, lead tetracetate, osmium tetroxide, diazomethane, selenium dioxide, N-bromosuccinimide, organolithium compounds, dicyclohexylcarbodiimide, boron trifluoride, polyphosphoric acid, trifluoroacetic acid.

6 : *Rearrangements.*

Rearrangements involving electron deficient carbon and nitrogen (Allylic, Wagner-Meerwein, Pinacol Pinacolone, Wolff,

Hofmann, Curtius, Lossen, Schmidt Demjanov, Beckmann) :  
Fries migration, Benzoic acid rearrangement, Benzidine  
rearrangement, Stereochemistry of 1, 2 Shifts, Claisen rearran-  
gement, Transannular rearrangement.

7 : *Free Radicals* :

Types, formation, detection, configuration, stability,  
reactions, Vinyl polymerisation.

8 :

Aromaticity of non-benzenoid compounds with special  
reference to azulenes. Tropolones and mesoionic compounds.

9 :

Comprehensive study of the following reactions Mich-  
ael's condensation, Diel's—Alder reaction, Stock-Enamine  
reaction, Oppenahure oxidation, Cycloadditions, Hydrobora-  
tion, reactions of diazomethane, diazoacetic ester and ketones,  
Welf—Kishner reduction, Leuckart reaction, Mannich reaction,  
Arbusov and Wittigs's reaction, Birch reduction, Darzen's  
condensation.

10 : *Organo Fluorine Compounds* :

Characteristics of carbonfluorine bond; Methods of fluo-  
rination, characteristic properties of fluorocarbon's; General  
study of biologically active organo fluorine compounds.

Paper III—Physical General

100 marks.

3 Hrs. duration

- *Quantum Mechanics*

- (a) Approximate methods-variation principle, perturba-  
tion theory, time dependent and time independent  
perturbation, application to polyelection atoms,  
central field approximation, Hartres approximation  
to self consistent field theory.
- (b) Symmetry properties and group theory; Molecular  
symmetry, symmetry elements, mathematical  
definition of a group, point groups, representation-  
reducible, and irreducible, character table, symmetry  
orbitals relationship of group theory to quantum  
mechanics.

## 2. Chemical Kinetics.

- (a) Theories of reaction rates (a) Collision theory (b) Transition state theory—derivation of the rate constants in terms of partition functions of the reactants and the activated complex, (c) comparison of the results of the two theories, steric or probability factor and its physical significance, Approximate expressions for different type of reactants (d) Thermodynamic derivation of the rate constant.
- (b) Theories of unimolecular gaseous reactions (a) Lindeman's theory and its shortcomings (b) Hinshelwood's treatment (c) Treatment of Kassel, Rice and Ramsberger (d) Slater's treatment (non-mathematical treatment).

Mechanism of the following reaction and the derivation of the rate law :

- (a) Decomposition of nitrogen pentoxide.
- (b) Isotopic exchange reaction between  $\text{Co(III)}$  and  $\text{Co(II)}$ .
- (c) Oxidation of  $\text{Cr(III)}$  by  $\text{Ce(IV)}$ .
- (d) Oxidation of  $\text{Fe(II)}$  by  $\text{Ti(III)}$ .

## 3. Polarography :

Current voltage curve with Pt indicator electrodes.

Current voltage curve with the dropping mercury electrodes.

Experimental set of a polarograph. Scope of Polarography, dropping mercury electrodes, its advantage and limitations. Elementary ideas of limiting current, migration current, diffusion current, kinetic current, catalytic current and absorption current. Ilkovic equation. Equation of a reversible polarographic wave (cathodic, anodic and cathodic-anodic waves) Derivative polarographic waves, Significance of half-wave potential, Influence of strength on half wave potential, Polarographic maxima.

## 4. Reversible Processes controlled by diffusion of complexon :

Reversible reduction of complex to metals, consecutive complex formation in which the reduction of product forms an amalgam, Amperometry.

### 5. *Spectroscopy* :

NMR spectroscopy—theory, experimental technique, chemical shift and factors influencing the chemical shift, spin-spin coupling, first and higher order patterns, applications in the elucidation of molecular structure (protons) attached to carbon, nitrogen, oxygen and sulphur, Chemical exchange, hindered rotation, hydrogen bonding, applications.

Elementary idea of EPR and its application in the elucidation of molecular structure.

### 6. *Surface Chemistry*.

- (a) Adsorption of gases and vapours on solids, Absorption, adsorption and sorption, effect of temperatures and pressure. Freundlich adsorption isotherm, unimolecular and Langmuir's adsorption isotherm. Type of adsorption-physical and chemical mechanism of heterogeneous catalysis, absorption by solids from solution. Application of Freundlich and Langmuir isotherm, application of adsorption in chromatography and ion exchange.
- (b) Adsorption on surface of solutions—Gibbs adsorption equation and its verification. Spreading of one liquid on another, insoluble films, mono layer, Langmuir's apparatus for the study of these films and relationship between surface pressure and the area of the molecules.
- (c) Electrical phenomenon at interfaces, electro-capillary curve at mercury adsorption interface, theory of double layers-Helmholtz and Guoy's concept, electro-osmosis, streaming potential, Zeta potential and its quantitative treatment, influence of ions on Zeta potential, electrophoresis. Colloidal electrolyte, soaps and ionic micelles and their typical properties.

### 7. *Magneto Chemistry*.

Magnetic properties, types of magnetic behaviour, Experimental method of determining susceptibility. Theories of atomic and molecular diamagnetism, diamagnetism and molecular structure, theories of atomic and molecular paramagnetism and molecular structure.



### 8. *Dipole moments.*

Polarisation of molecules, experimental methods, effect of solvents, its application in elucidation of molecular structure of organic (diphenyl, azo, azoxy, diazo etc.) and inorganic compounds, determination of absolute bond moments, its relationship with dissociation constants.

## Paper IV—Inorganic Special

3 Hrs. duration

100 marks.

1 :

Imperfections and properties of solids : Ionic conductivity and diffusion, Ferroelectrics luminescence, electrical, optical and thermal excitation in ionic solids, non-stoichiometric oxides and chalcogenides.

2 :

- (a) Magnetic relaxation and resonance phenomena in solids. Mossbauer spectroscopy.
- (b) Fluorescent and laser properties of inorganic complex compounds.

### 3 : *High temperature inorganic chemistry :*

Definition, principle of successive entropy states attainment, measurement and control of high temperature, relative stabilities of solids at high temperatures; high temperature synthesis, high temperature study of halides, oxides, and hydroxides, measurement of thermodynamic and transport properties at high temperatures.

### 4 : *Thermochemistry of Inorganic compounds :*

Introduction, definition of bond strength, heat of reaction and experimental methods. Study of molecular addition compounds. Steric and inductive effects,  $\pi$  bonding, donor strength and reorganisation energy. Discussion of metal carbon and metal halogen bonds. Heat of neutralisation of acids in aqueous media and thermochemical studies in non-aqueous media (acetic acid and ethylacetate and other non-polar solvents).

5 :

Application of EPR, NMR, NQR and X-ray absorption spectroscopy in inorganic chemistry.

6 :

*Isomerism in inorganic complexes :*

Optical and geometrical isomerism, study of optical rotatory dispersion and circular dichroism; optical activity—with special reference to the stereochemistry of Cr, Co, Ni and Pt metal complexes. Preparation of optically active compounds. Conformation of inorganic complexes.

7 :

*Inorganic reaction mechanism :*

- (i) Substitution reaction in octahedral and square planar complexes, cis and trans effect.

8 : *Inorganic reaction mechanism :*

- (i) Addition reactions (ii) Insertion reactions (iii) Reactions of hydrated electron.

9 :

Synthesis of co-ordination compounds involving templates and electrolysis; compounds of macrocyclic ligands and stability of large ring.

10 :

- (a) *Metals cluster compounds*—synthesis, structure and nature of metal—metal interactions in metal cluster compounds.
- (b) *Homogeneous catalysis*—stages, types of systems, Zeigler-Natta Catalysis and industrial applications.

Or Paper IV—(b) Organic Special :

3 hrs. duration

100 marks

1. *Heterocyclic Compounds :*

Pyrazole, Imidazole, Thiazole, Oxazole, Pyrimidine, Pyrazine and Purine. Important derivatives of the above.

2. *Alkaloids :*

Detailed study of the following : Narcotine, Quinine, Morphine, Reserpine, Lysergic Acid, Strychine. Elementary ideas of biogenesis of alkaloids.

### 3. *Drugs :*

History and basic principles of chemotherapy. A general treatment of local anaesthetics, Analgesics, Antimalarials, Sulfadugs; Adrenaline; Thyroxine. Important synthetic and natural (Pyrethrins and Rotenone) pesticides.

### 4. *Natural Colouring Matter.*

Chromones, Flavones (Chrysin) Flavonols (quercetin), Athnocyandines and Anthocyanines (cyanidin and cyanin), Chlorophyll and Haemin.

### 5. *Antibiotics.*

Pencillin—Chloromycetin, Streptomycin and Aureomycin.

### 6.

Terpenes; detailed study of the following : Bicyclic; pinine and camphor sesquiterpenes; farnesol, candinene and santonine Diterpenes; abietic acid, Triterpenes; squalene and amyrins Biogenesis; elementary treatment.

### 7.

Steroids and related compounds : Isolation, properties, structure and synthesis of cholic acid, cholesterol, ergosterol, estrone, strol equilenin, estrodiol, androgens (androsterone and testosterone) progesterone and cortisone, Synthetic strogens.

### 8.

Chemistry and functions of the following vitamins; A , A<sub>2</sub> , B<sub>1</sub> ; B<sub>2</sub> , B<sub>6</sub> , C,D,E, and K; Biotin and Pantothenic acid. An elementary treatment of B<sub>12</sub> .

### 9. *Physical methods and structure;*

Interpretation of spectra of typical organic molecules only. Instrumentation excluded, familiarity with simple structural problems employing spectrometric methods.

- (i) U.V. Spectra; Simple chromophoric groups conjugated systems, aromatic systems, steric effects.
- (ii) I.R. Spectra; Vibrations of H attached to various compounds, viz; alkanes, cycloalkanes, alkenes, alkynes, mononuclear aromatic hydrocarbons,

groups other than C-H viz; O-C, C-C, O-H, C-O-C, COOH, CO-NH<sub>2</sub>, NH<sub>2</sub>.

- (iii) N.M.R. Spectra; Spin-spin interactions, chemical exchange, shielding mechanism, protons on nitrogen.
- (iv) Mass spectra; General appearance of the spectra, recognition in simple compounds like aliphatic and aromatic hydrocarbons, alcohols, ketones, aldehydes, esters and amines.
- (v) Optical rotatory dispersion; Theoretical aspects, structure and O.R.D. Cotton effect.

#### Or Paper IV—(e) Physical Special :

3 hrs. duration

100 marks.

##### 1. Phase Rule study of following systems :

- (a) (i) Three liquids with one pair of them being partially miscible (chloroform, water and acetic acid).
- (ii) Three elements forming simple eutectic mixture.
- (iii) Two salts and water.
  - (a) No chemical combination and no hydrate formation (NaCl—KCl—H<sub>2</sub>O)
  - (b) Double salt formation  
 Ag NO<sub>3</sub> —NH<sub>4</sub> NO<sub>3</sub> —H<sub>2</sub>O at 30°  
 Ag NO<sub>3</sub> —KNO<sub>3</sub>—H<sub>2</sub>O
  - (c) Hydrate formation  
 NaCl—Na<sub>2</sub> SO<sub>4</sub> —H<sub>2</sub>O at 150° C.  
 NaCl—Na<sub>2</sub> SO<sub>4</sub> —H<sub>2</sub>O at 25° C.
- (b) (a) Principle of separation of two salts from a mixture by crystallisation.
- (b) Construction of phase rule diagram of three components.

##### 2. Thermodynamics

- (a) Limitation of Gibbs Helmholtz equation, Nernst heat theorem and its consequences, calculation of  $\Delta F$  from  $\Delta H$ . Application of Nernst heat theorem to gaseous system, Nernst approximate formulae. Third law of thermodynamics, absolute entropy,

determination of absolute entropy of solids, liquids and gases, entropy of transition, limitations and exceptions of IIIrd law.

- (b) Thermodynamic treatment of concentration. (cells with and without transport), mechanism of liquid—liquid junction potential and its determination. Mechanism and significance of electrode potential, standard emf and equilibrium constant, conductance and emf in non-aqueous media. Redox potential and its applications.

### 3. *Statistical Mechanics*

- (a) Statistical mechanics of an assembly of independent localised and non-localised systems. Classical statistical mechanics Maxwell Boltzman statistics, Maxwell velocity distribution and kinetic theory of gases, partition function and their applications.
- (b) Quantum statistics, Bose-Einstein statistics and its application to problems of black body radiations. Fermi Dirac statistics and its application to electron theory of metals and thermodynamic emission. Heat capacity of solids and gases, ortho and para hydrogen problem, calculation of equilibrium constants.

### 4. *Electrochemistry* :

- (a) Kinetics of simple electrode processes without specific adsorption or chemisorption (Stationary method) current voltage behaviour, Exchange current Determination of transfer coefficient.
- (b) Rigorous treatment of a slow electrode process for a growing mercury dropping electrode. Irreversible reduction of complexes at D.M.E.

### 5. *Quantum mechanics* :

Quantum molecular orbital theory and application to simple molecules, ethylene, benzene, acetylene, butadiene, trimethyl methane, defects of simple theory, calculation of electron densities, bond order and free valencies.

### 6.

Ligand field theory—Free atom in a complex, energy level diagram, magnetic properties of the complexes. Spectroscopy—

Radiation theory, electronic states of molecules, diatomic and polyatomic molecules, selection rule molecular vibrations, electronic spectra of polyatomic molecules (benzene).

### *7. Chemical Kinetics :*

- (a) (a) Influence of ionic strength, salt effect primary and secondary (b) influence of solvent (c) influence of pressure. Discussion of the above factors in relations to the type of reactive species in solution. Entropy of Activation : Its calculation, normal values for the first and second order reactions, its interpretation in terms of reactive species.
- (b) Mechanism of electron & transfer reactions: Bridge activated and outer sphere activated complex. Its discussion in relation with Fe (III), Cr (III) and Cr (II) reactions. Kinetics of fast reactions.

## PRACTICALS

Practicals

200 marks.

### Inorganic Chemistry

#### (I) Qualitative analysis :

- (a) Analysis of mixtures containing not more than eight radicals two of which may be rare elements.
- (b) Analysis of alloys, ores and minerals.
- (c) Analysis of mixture containing four elements from the Following :  
Li, Be, Ce, Ti, Tl, Zr, Th, V, Se, Mo, W, U.

#### (II) Instrumental methods of analysis :

Conductometric, potentiometric and colorimetric.

##### 1. Quantitative Analysis :

- (a) Determination of three basic and/or acidic constituents from a mixture.
- (b) Determination of three constituents from alloys.
- (c) Determination of two constituents from an ore besides silica.

Acquaintance with standard gravimetric and volumetric methods including the Use of iodate, bromate, titanium trichloride, ceric sulphate, semi-micro method is expected.

## 2. Preparations ;

Substances should be selected with a view to the processes, the fitting up and manipulation of the apparatus necessary in their preparation. The following list gives an idea of the types of preparation which may be expected :

Sodium cobaltinitrile, sodium thiousulphate, potassium permanganate, potassium dichromate, potassium iodate, anhydrous chlorides of Mg, Zn, Al and Pb. Werner's complexes, hydrazine sulphate, hydroxylamine hydrochloride, iodine from iodine residues, barium nitrate from barytes, lead tetra-acetate from galena, cerium and thorium compounds from Monasite and other preparations of a similar nature.

## Organic Chemistry

1. Separation and identification of organic mixtures containing upto three components.
2. Estimation of sulphur by Messinger or fusion method.
3. Estimation of the following :  
     Halogen by fusion method or Stepanow's method,  
     nitrogen by *Kjeldhal's* method.
4. Estimation of  $\text{OH-NH}_2$ ,  $\text{—NO}_2$ , and methoxy-groups.
5. Simple experiments based on chromatographic techniques.
6. Preparation of organic compounds involving not more than four stages.

## Physical Chemistry

1. Conductivity :
  - (a) Titration-Non-aqueous medium.
  - (b) Hydrolysis of aniline hydrochloride.
  - (c) Basicity of organic acid.
  - (d) Determination of  $\text{p}^{\text{H}}$
  - (e) Comparison of strength of acids.
2. Partition coefficient—Hydrolysis of aniline hydrochloride.
3. To determine the transport number—
  - (a) Hittorf's method.
  - (b) Moving boundary method.

## 4. Colorimetry -

- (a) To study Lambert and Beer's Law.
- (b) To determine the composition of a solution.
- (c) To study complex formation.

## 5. Chromatography :

- (a) Separation of Inorganic ions using paper and column chromatographic techniques.
- (b) Separation of Inorganic ions by ion exchange resins.

## 6. Determination of dipole moment.

## 7. E.M.F. (a) Solubility of sparingly soluble salt.

- (b) Complex formation.
- (c) Determination of pH using hydrogen and quinhydrone electrode.
- (d) To determine  $E^0$  of  $F^{+3}/Fe^{+2}$  couple.
- (e) Determination of degree of hydrolysis of aniline-hydrochloride.
- (f) Setting up of electrodes : calomel, hydrogen, quinhydrone Ag-AgCl, sulphide electrode.
- (g) To determine the dissociation constants of polybasic acids.

## 8. Chemical kinetics (a) to determine the order of reaction of saponification of ethylacetate by isolation method.

- (b) To determine velocity constant, temperature coefficient, energy of activation, salt effect etc. for a reaction,
- (c) Catalytic decomposition of  $H_2O_2$  by  $Fe^{+2} + Cr_2O_7^{--}$

9. Polarography (a) To determine  $E_{1/2}$  of Zn, Cd, Pb, etc.

- (b) To verify Ilkovic equation.
- (c) To determine the concentration of metal ions in a given solution.
- (d) Estimation of nitro benzene.



- (e) Stability constant and formula of lead oxalate complex.

10. Photometry

- (i) Formation constants of copper EDTA complex by Bjerrum method.
- (ii) To determine  $p^{ka}$  value of an acid.
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MINUTES OF THE SPECIAL MEETING OF THE BOARD OF  
STUDIES IN ZOOLOGY HELD ON 25.6.79 AT 10 A.M.  
IN THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Prof. A.S. Kapoor (*Convener*)
2. Dr. V.P. Agrawal
3. Shri J.M. Srivastava
4. Shri A.K. Bose
5. Shri K.S. Dhillon
6. Dr. S.C. Saxena

1. With reference to the Academic Council Res. No. 16 dated 15.5.1979 and the Syndicate Res. No. 2 (iii), dated 26/27 May, 1979, the Board *recommended* the courses of study for the M.Sc. (Prev.) Examinations of 1980 and 1981 and Final examinations of 1981 and 1982 according to the Annual Scheme of Examination (*Vide appendix*).

2. With reference to the Academic Council Res. No. 10 dated 1st June, 1979 and Res. No. 3, dated 16th June, 1979 the Board *resolved to recommend* that the word "Unit" be deleted in all the syllabii of the Under-Graduate and Post-Graduate examinations in the Subject and accordingly 1979 editions of the Syllabi prescribed for the various Examinations of 1981 of the above subject be got printed.

The meeting ended with a vote of thanks to the Chair.

Sd/- A S. Kapoor  
*Convener*

## SCHEME OF EXAMINATION

## M.Sc. Examination

## (Annual Scheme)

Each theory paper	3 hours	100 marks
Viva-Voce (Wherever permitted)		100 Marks
Dissertation/Thesis/Survey Work/Field work, if any :—		100 Marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain: (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical(s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	} of the aggregate marks taken together of the Previous and the Final Examinations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper(s)/Practical(s)/Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36% in the case of Practical) shall be taken into account in respect of such Paper(s)/Practical(s)/Dissertation/Viva-voce as are cleared after the expiry of the aforesaid period of three years : provided that; in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the Office of the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students (Correspondence course students included) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examination.

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate Candidates, the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

### PREVIOUS

There shall be four theory papers each of 100 marks and three hours duration and 2 practicals of 4 hours duration each day for two days carrying 100 marks each.

		Duration	Marks
Paper I	Invertebrata and Principles of Animal Taxonomy	3 Hours	100
Paper II	Biological Chemistry and Physiology	„	100
Paper III	Cell Biology, Genetics and Principles of Microscopy	„	100
Paper IV	Evolution and Statistical Methods in Biology	„	100
	Practical based on Papers I to IV		200

### Scheme of Practical Examination and Distribution of Marks :—

#### First Day

(a)	Exercise in Biological Chemistry	24	Marks
(b)	Exercise in Cell Biology	12	„
(c)	Exercise in Invertebrate Taxonomy (Using Taxonomic Key)	8	„
(d)	Exercise in Statistical Methods	12	„
(e)	Identification and comments on spots (eight)	24	„
(f)	<i>Viva-voce</i>	10	„
(g)	Class Record	10	„

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G. Total 100 Marks

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## Second Day

(a) Invertebrate major dissection	30 Marks
(b) Invertebrate minor dissection and permanent preparation	15 Marks
(c) Exercise in Physiology	25 Marks
(d) Exercise in Genetics	10 Marks
(e) Viva-voce	10 Marks
(f) Class Record	10 Marks

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**G. Total 100 Marks**

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## Final

There shall be four theory papers (including two of the special group) each of 100 marks and three hours duration and 2 practicals of 4 hours duration each day for two days carrying 100 marks each.

Paper		Duration	Marks
I	Chordata and Developmental Biology of Chordates	3 Hours	100
II	Animal Ecology and Ethology	„	100
*Paper III	Special Paper	„	100
*Paper IV	Special Paper	„	100
	Practical based on Papers I and II		100
	Practical based on Papers III and IV		100

\*A candidate may offer any one of the specializations listed below :

- (a) Cell Biology
- (b) Developmental Biology
- (c) Endocrinology
- (d) Entomology
- (e) Fish Biology
- (f) Physiology
- (g) Radiation Biology
- (h) Toxicology

## Scheme of Practical Examination and Distribution Marks

The practical examination on the first day shall be based on Papers I and II and that on the second day shall be based on Papers III and IV.

## First Day

(a) Vertebrate major dissection	25 Marks
(b) Vertebrate minor dissection/ permanent preparation/ exercise in developmental biology	16 Marks

(c) Exercise in Ecology/Ethology	15 Marks
(d) Identification and comments on spots (eight)	24 Marks
(e) <i>Viva-voce</i>	10 Marks
(f) Class record	10 Marks

G. Total	100 Marks
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**Second Day**  
**Cell Biology**

(a) Biochemical estimation	20 marks
(b) Exercise on histochemical or cytochemical techniques	16 Marks
(c) Light Microscopic Preparation of Mitochondria/Golgi bodies/spermatozoa/single ovum	8 Marks
(d) Microtomy	12 Marks
(e) Identifications and comments on spots (eight)	24 Marks
(f) <i>Viva-voce</i>	10 Marks
(g) Class Record	10 Marks

G. Total	100 Marks
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**Developmental Biology**

(a) Exercise on living embryos or larvae	20 Marks
(b) Exercise on tissue or organ culture	10 Marks
(c) Exercise on permanent whole mount/hypophysectomy/paper chromatography/vaginal cycle/metamorphosis/teratogenesis/morphogenesis	12 Marks
(d) Microtomy	14 Marks
(e) Identifications and comments on spots (eight)	24 Marks
(f) <i>Viva-voce</i>	10 Marks
(g) Class Record	10 Marks

G. Total	100 Marks
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## Endocrinology

(a) Dissection or surgical procedure	12 Marks
(b) Exercise on bioassay or hormone administration effects	10 „
(c) Quantitative estimation of glycogen/cholesterol/ascorbic acid / fructose in a given endocrine tissue	12 „
(d) Exercise on sperm count/ vaginal cycle/effect of epinephrine on fish chromatophores	8 „
(e) Microtomy	14 „
(f) Identifications and comments on spots (eight)	24 „
(g) <i>Viva-voce</i>	10 „
(h) Class Record	10 „
G. Total	100 Marks

## Entomology

(a) Dissection	16 Marks
(b) Permanent preparation	8 „
(c) Identification of 5 insects using taxonomic key	20 „
(d) Microtomy	12 „
(e) Identifications and comments on spots (eight)	24 „
(f) <i>Viva-voce</i>	10 „
(g) Class Record	10 „
G. Total	100 Marks

## Fish Biology

(a) Major dissection	20 Marks
(b) Minor dissection/permanent preparation/species identification using taxonomic key	8 „
(c) Hydrobiological/biochemical/physiological exercise	8 „
(d) Microtomy	12 „

(e) Identifications and comments on spots (six)	24	„
(f) Field study	8	„
(g) <i>Viva-voce</i>	10	„
(h) Class Recosd	10	„
G. Total	100	„

### Physiology

(a) Two exercises based on the prescribed practical work (to be framed by the examiner on the spot)	60	Marks
(b) Microtomy	10	„
(c) <i>Viva-voce</i>	15	„
(d) Class Record	15	„
G. Total	100	Marks

### Radiation Biology

(a) One major exercise based on prescribed practical work (to be framed by the examiners on the spot)	25	Marks
(b) One minor exercise based on prescribed practical work (to be framed by the examiners on the spot)	16	„
(c) Microtomy and pathological study	15	„
(d) Identifications and com- ments on spots (eight)	24	„
(e) <i>Viva-voce</i>	10	„
(f) Class Record	10	„
G. Total	100	Marks

### Toxicology

(a) Dissection of pest	15	Marks
(b) An exercise on assessment of toxicity	15	„



(c) An exercise on estimation or identification of insecticides/toxicological statistics	10	„
(d) Identification and comments on spots (six)	24	„
(e) Microtomy, including pathological study	10	„
	16	„
(f) <i>Viva-voce</i>	10	„
(g) Class Record	10	„
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G. Total	100	Marks
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## SYLLABUS

### Previous

#### Paper I:—Invertebrata and Principles of Animal Taxonomy—

100 Marks

3 hours duration

Total number of lecture hours : 80

#### Invertebrata

64

1. A study of the classification of invertebrates, with distinguishing features and examples of various subdivisions. 3
2. Locomotory mechanisms : 6
  - (a) Amoeboid movements; ultrastructure of cilia and flagella; ciliary and flagellar movements; molecular and physiological mechanisms involved in the three kinds of movements.
  - (b) Myonemes and muscle fibres in invertebrate structure and their involvement in locomotory contraction processes.
  - (c) Locomotion in relation to hydrostatics, coelom, metamerism and arthropodization.
  - (d) An outline of flight mechanism in insects.
3. Feeding mechanisms : 4
  - (a) Amoeboid feeding.
  - (b) Ciliary feeding.
  - (c) Filter feeding.
  - (d) Parasitic mode of feeding.
  - (e) Feeding mechanisms in insects and echinoderms.

4.     **Respiration :** 4
  - (a) Respiration in lower invertebrates (protozoans to helminths.)
  - (b) Gills and lophophores.
  - (c) Gills and lungs in molluscs.
  - (d) Gills, tracheae and lung-like structures in arthropods.
  - (e) Physiology of respiratory pigments in invertebrates.
5.     **Excretion :** a study of structural and functional organization of excretory systems in various invertebrate groups and a survey of various excretory products met with in them. 4
6.     **Osmoregulation and ionic regulation :** a survey of principal mechanisms in fresh-water, marine and terrestrial forms. 3
7.     **Structural and functional organization of nervous systems and receptors :** 7
  - (a) Plan of nervous systems in the coelenterates, platyhelminths, annelids, arthropods, molluscs and echinoderms; structural and functional complexities of 'brain' and ganglionic structures.
  - (b) Receptors : structural and functional organization of the mechanoreceptors, chemoreceptors and photoreceptors.
8.     **Endocrine system :** a survey of endocrine structures and their hormones; role of neurosecretions and hormones in developmental events of insects and crustacea. 3
9.     **Reproduction :** 6
  - (a) Reproduction in Protozoa.
  - (b) Reproduction in Porifera.
  - (c) Reproduction in Metazoa : sexual reproduction; parthenogenesis.
  - (d) Reproduction in Metazoa : asexual reproduction in Coelenterata and Polychaeta.
  - (e) Larval forms and their significance.
10.    **Criteria for phylogentic interrelationships between invertebrate phyla.** 5

11. Origin of Parazoa, Mesozoa and Metazoa. 2
12. Origin of Radiata (Coelenterata and Ctenophora). 1
13. Origin of Bilateria from Radiata (Importance of planula larva and ctenophores). 1
14. Phylogentic significance of Rhynchocoela. 1
15. Interrelationship of the pseudocoelomate groups, with special reference to Rotifera, Gastrotricha. Kinorhyncha, Nematomorpha and Entoprocta. 3
16. Affinities and evolutionary significance of the unsegmented lesser protostome phyla (Priapulida, Echiuroidea and Sipunculoidea). 1
17. Phylogenetic relationship between the coelomate phyla (Annelida, Onychophora, Arthropoda and Mollusca). 4
18. Affinities and evolutionary significance of the lophophorate coelomate phyla (Brachiopoda, Phoronida and Ectoprocta). 3
19. Affinities of the invertebrate deuterostome phyla (Chaetognatha, Echinodermata, Pogonophora and Hemichordata). 3

#### Principles of Animal Taxonomy

16

1. Introduction to the science of taxonomy; rules of nomenclature. 2
2. Principles of classification : theories of biological classification and their history; the species category; the polytypic species; population systematics; intraspecific categories. 5
3. Methods of classification : taxonomic collection and the processes of identification, taxonomic characters; types of variations (qualitative and quantitative) within a single population; methods of arriving at taxonomic decisions on species level; preparation and use of taxonomic keys. 7
4. Cytotaxonomy : importance of cytology and genetics in taxonomy. 2

#### *Books recommended :*

1. Barrington, E.J.W. : Invertebrate Structure and Function. Thomas Nelson and Sons Ltd., London, 1976 (Low priced text reprint : English Language Book Society, London, 1967).
2. Barnes, R.D. : Invertebrate Zoology (2nd edition). W.B. Saunders Co., Philadelphia, 1968.

3. Boradaille, L.A. and Potts, F.A. : The Invertebrata : A manual for the use of students (4th revised edition by Kerkut, G.A.), University Press, Cambridge, 1961 and later editions.
4. Hyman, L.H. : The Invertebrates (vols. I to VI). McGraw—Hill Book Co., New York, 1951 to 1967.
5. Storer, T.I. and Usinger, R.L. ; General Zoology. McGraw Hill Book Co., New York, 1957 Indian reprint : Tata McGraw Hill Publ. Co., New Dehli, 1971).
6. Mayr, E. : Principles of Systematic Zoology. Tata McGraw Hill Publ. Co. Ltd., New Delhi 1969.
7. White, M.J.D. : Animal Cytology and Evolution. University Press, Cambridge, 1954 and later editions.
8. Simpson, G.G. : Principles of Taxonomy, Columbia University Press. New York, 1961 (Indian reprint : Oxford and IBH Publ. Co., New Dehli, 1969).
9. Barnes, R.D. : Invertebrate Zoology (2nd edition). W.B. Saunders and Co., Philadelphia, 1968.
10. Maglitsb, P.A. : Invertebrate Zoology (2nd edition). Oxford University Press, London, 1972.
11. Gardner, M.S. : The Biology of Invertebrates. McGraw Hill Co., New York, 1972.
12. Hickman, C.P. : Biology of the Invertebrates. Mosby Co., St. Louis, 1967.
13. Rounds, H.D. ; Invertebrates : Diversity of life. Reinhold Book Corp., New York, 1968. (Indian reprint : Affiliated East-West Press, New Delhi, 1971).

## Paper II : Biological Chemistry and Physiology :

3 hours duration

Marks 100

Total number of lecture hours : 80

Biological Chemistry 40

1. Basic chemical concepts : a study of the chemical bonds and functional groups. 2
2. Biocatalysis : clasification and nomenclature of the enzymes; nature of enzymes; enzyme specificity; factors affecting enzyme activity; enzymatic and non-enzymatic catalysis; coenzymes and their functions. 6
3. Energy considerations : biological oxidation and reduction : Fundamental reactions of biological oxidation; redox potential and electron transfer; redox chains in nature (types of

oxidation systems): coenzymes and prosthetic groups of redox system; theories of biological oxidation-reduction. 6

#### 4. Organic constituents in living systems :

##### I. Carbohydrates : 5

A. Definition, general properties, classification; configuration of carbohydrates.

B. Structure and importance of :

(a) Monosaccharides ;

Diose : glycoaldehyde.

Trioses : glyceric aldehyde; dihydroxyacetone.

Tetroses : erythrose; erythrulose.

Pentoses : ribose; ribulose; xylulose.

Hexoses : glucose; mannose; fructose; galactose.

Heptoses : sedoheptulose

Sugar derivatives :

(i) Deoxy sugars : deoxyribose.

(ii) Amino sugars : glucosamine; neuraminic acid.

(iii) Sugar acids : glyceric acid; uronic acids : glucuronic acid and galacturonic acids, ascorbic acid.

(iv) Sugar alcohols : glycerol; ribitol; mesoinositol (myoinositol).

(v) Phosphoric esters of the sugars : triose phosphates; pentose phosphates; hexose phosphates.

(b) Disaccharides : lactose; maltose; sucrose.

(c) Polysaccharides : cellulose; starch; glycogen; pectin; chitin; mucopolysaccharides.

C. Metabolism :

(a) Digestion and absorption.

(b) Catabolism of glycogen, glucose and fructose; details of glycolysis and Krebs cycle; Cori cycle.

(c) Phosphogluconate pathway (=pentose phosphate pathway).

(d) Synthesis of glycogen : glycogenesis and glyconeogenesis.

## II. Proteins : 8

(a) Definition, general properties, classification and importance of amino acids and proteins; nucleoproteins.

(b) Structural formulae of the amino acids; concept of essential and non-essential amino acids.

(c) Structure of proteins : primary, secondary, tertiary and quaternary.

(d) Basic knowledge of the determination of amino acid sequence as exemplified by a tripeptide : glycylalanylvaline.

(c) Metabolism.

(i) Digestion and absorption.

(ii) Amino acid degradation : deamination reactions : oxidative and non-oxidative deamination : transamination and transdeamination : decarboxylation : ornithine cycle of urea formation; fate of carbon skeleton of the amino acids (metabolism of individual amino acids excluded).

(iii) Synthesis of the non-essential amino acids and of protein.

## III. Lipids : 8

(a) Definition, general properties and classification.

(b) Fatty acids : structure, properties, types and importance, with special reference to essential fatty acids.

(c) Structure and importance of :

(i) Simple lipids : fats; waxes.

(ii) Compound lipids : phospholipid; glycolipids; aminolipids; sulpholipids,

(iii) Fat soluble vitamins : A, D, E, and K.

(iv) Steroids : cholesterol; bile acids; steroid hormones.

(v) Lipoproteins.

- (d) Metabolism :
  - (i) Digestion and absorption.
  - (ii) Catabolism of fats ( $\beta$ -oxidation of fatty acids).
  - (iii) Ketogenesis and ketone bodies.
  - (iv) Synthesis of fatty acids and fats (triglycerides only).

#### IV. Nucleic acids: 4

- (a) Definition, structure, classification and importance.
- (b) Composition of nucleic acids: structure and importance of purines, pyrimidines, nucleosides and nucleotides.
- (c) Metabolism :
  - (i) Digestion and absorption.
  - (ii) Catabolism of purine and pyrimidine bases.
  - (iii) Synthesis of mononucleotides (excluding the details of the steps leading to the synthesis of inosinic (acid) and nucleic acids.

#### V. Inborn errors of metabolism : 1

##### Physiology 40

#### 1. Physiology of the nervous system : 7

- (a) Nerve impulse : biophysics, biochemistry, and molecular physiology of genesis, conduction and transmission across synaptic junctions.
- (b) Synapse physiology and integration of information: coding in the neural information processing.
- (c) Biochemistry of the learning process.
- (d) Physiological distinctions between central and peripheral nervous systems and their subdivisions.
- (e) Functional organisation of various topographic parts of the mammalian brain; an elementary idea of the nuclear architecture of the mammalian brain.
- (f) Reflex action : various types of central and peripheral reflexes in mammalian nervous systems.

#### 2. Physiology of the receptor system : 2

- (a) General mechanism involved in stimulus transduction at receptor sites.

- (b) Functional architecture and stimulus processing in retina, organ of Corti and olfactory epithelium.

3. Physiology of muscle tissue : 4

- (a) Morphofunctional architecture of the contractile apparatus in muscle tissue.
- (b) A detailed study of the biophysical and biochemical events underlying contraction and relaxation processes.
- (c) Physiological properties of cardiac, skeletal and visceral muscles.
- (d) Nerve innervation, denervation and muscle function.

4. Excretion : 3

Biophysics, biochemistry and physiology of various functions performed by the vertebrate nephron; origin and formation of nitrogenous excretory products; physiological relationship between habitat and excretion mechanisms.

5. Respiration : 3

- (a) Factors modifying oxygen consumption in animals.
- (b) Acclimatisation to low oxygen tension; toxicity of high oxygen tension.
- (c) Chemistry of respiration, with particular reference to mammals.
- (d) Buffer systems of blood and the acid-base balance.

6. Osmoregulation : 2

- (a) Fluid and solute exchange in animals living in different habitats.
- (b) Skin, etc. in osmoregulatory phenomena. Role of such organs as kidney, gill, contractile vacuole.

7 Nutrition, digestion and absorption : 4

- (a) Nutritive types in animal kingdom.
- (b) Role of amino-acids, lipids, carbohydrates, vitamins, minerals, etc. in nutrition
- (c) Composition, molecular mechanisms of secretion and action of all types of digestive juices met within the mammalian digestive pathway: hormonal and nervous regulation of secretion of digestive juices.
- (d) Physiological mechanisms involved in the absorption of the end products of digestion.



8. Blood and circulation of body fluids : 6
- (a) Physiology of RBC and the mechanism of transport of gases by blood; physiology of leukocyte function; antibody production, anti-inflammatory activity, phagocytosis, etc.; physiological basis and clinical significance of blood groups; biochemistry and physiology of blood clotting.
  - (b) Types of heart and transport mechanisms.
  - (c) General comparative study of cardiac cycle in animals with particular reference to man.
  - (d) Homeostasis and nervous regulation of heart function in vertebrates; conductile and contractile mechanisms in the heart.
9. Endocrine physiology : 6
- Cellular mechanisms of hormone action in target tissues; hypothalamic control of pituitary activity and phenomenon of neurosecretion; genesis, types and general functions of hormones of various endocrine glands (hypophysis, adrenal, thyroid, parathyroid, testis and ovary).
10. Reproduction : 3
- Physiological events accompanying fertilization process; endocrinological control of testicular, ovarian and uterine functions; capacitation; physiological aspects of implantation and parturition.

*Books recommended :*

1. Fairley, J.L. and Kilgour, G.L. : Essentials of Biological Chemistry (2nd edition). Reinhold Publ. Corp., New York, 1966 (Indian reprint-Affiliated East West Press, New Delhi 1971).
2. Conn. E.E. and Stumpf. P.K. : Outlines of Bio-Chemistry (2nd edition), John Wiley and Sons Inc., New York, 1967 (Indian reprint : Wiley Eastern Pvt. Ltd., 1971).
3. Cantarow, A. and Schepartz, B. : Biochemistry (4th edition). W.B. Saunders and Co., Philadelphia, 1967.
4. Prosser, C.L. and Brown F.A. : Comparative Animal Physiology (3rd revised edition by Prosser, C.L.). W.B. Saunders and Co., Philadelphia, 1973 (Saunders International Student Edition (2nd edition) ; Toppan Co. Ltd., Tokyo, 1965)
5. Keele, C.A. and Neil, E. : Samson Wright's Applied Physiology (12th edition); Oxford University Press,

London, 1971 (Low priced text reprint : English Language Book Society, London, 1972).

6. Gordon, M.S. : *Animal Physiology : Principles and Adaptation* (2nd edition). Macmillan Co., New York, 1972.
7. Ochs, S. : *Elements of Neurophysiology*. John Wiley and Sons Inc., New York, 1964.
8. Dowben, R.M. : *General Physiology : A Molecular Approach*. Harper and Row, New York, 1969.
9. Stand, F.L. : *Modern Physiology*. Macmillan & Co., New York, 1965.
10. Coxon, R.V. and Kay, R.H. : *A Primer of General Physiology*. Butterworths and Co. Ltd., London, 1967.
11. Davson, H. : *A Textbook of General Physiology* (3rd edition). Churchill, London, 1964.
12. Hoar, W.S. : *General and Comparative Physiology*. Prentice Hall Inc., Englewood Cliffs, N.J., 1966.
13. Giese, A.C. : *Cell Physiology* (4th edition). W.B. Saunders and Co., Philadelphia, 1973 (Saunders International Student Edition : Toppan Co., Ltd., Tokyo, 1973).

### Paper III—Cell Biology, Genetics and Principles of Microscopy

3 hours duration

100 marks

Total number of lecture hour : 80

#### CELL BIOLOGY

35

1. Cell theory and its Significance. 1
2. Structural, chemical and functional organisation of the following cell organelles 12
  - (a) Cell membrane.
  - (b) Mitochondria.
  - (c) Golgi complex.
  - (d) Endoplasmic reticulum.
  - (e) Lysosomes, peroxisomes and related particles.
  - (f) Ribosomes,
3. Nucleus and chromosomes : 5
  - (a) Interphase nucleus.
  - (b) Different types of chromosomes, autosomes, polytene and lampbrush chromosomes.
  - (c) Nucleous.

4. **Cell Division :** 5  
A detailed study of mitosis and meiosis, with special reference to chemical and physical changes; mechanisms of centriole cycle, spindle formation and anaphase movement of chromosomes.
5. **Gametogenesis :** 6  
(a) Origin and differentiation of Primordial germ cells.  
(b) Cytology and cytochemistry of spermatogenesis and oogenesis.  
(c) Biology of spermatozoa and ovum (structure, viability mobility, polarity, *etc.*).
6. **Fertilization :** 5  
A detailed study of fertilization, with special reference to the following phenomena :  
(a) Mechanism of approximation of gametes.  
(b) Contact and fusion of gametes.  
(c) Significance of fertilization.  
(d) Abnormal forms of fertilization ; gynogenesis, androgenesis and partial fertilization.  
(e) Acrosome reaction.
7. **Parthenogenesis :** 1  
Natural and artificial.

## GENETICS

- 35
1. **Mendel's laws and their significance :** 3  
Current status of mendelism.
2. **Linkage and crossing over :** 3  
Chromosome maps; cytological basis of crossing over.
3. **Mutations and mutagenic agents :** 5  
(a) Classification of mutations : translocation, inversion deletion, duplication and gene mutation.  
(b) Molecular basis of mutation.  
(c) Mutagenic agents.
4. **Variations in chromosome numbers :** 2  
haploidy, polyploidy, aneuploidy, euploidy and polysomy.
5. **Genetic interactions :** 3  
Complimentary, duplicate, inhibitory and polymorphic genes.
6. **Multiple gene inheritance.** 1

- |     |   |   |
|-----|---|---|
| 7.  | Multiple alleles :  | 4 |
|     | ABO, Rh and MN types of blood groups and their genetics.  |   |
| 8.  | Cytoplasmic inheritance and maternal effects :  | 2 |
| 9.  | Sex determination :   | 3 |
|     | XY, XO, ZW and other mechanisms; genic balance theory; gynandromorphs.                                |   |
| 10. | Evolution of sex chromosomes :  | 1 |
|     | Sex-linked inheritance.   |   |
| 11. | Molecular genetics :  | 5 |
|     | Structure function and duplication of nucleic acids; genetic code; structure and regulation of genes. |   |
| 12. | Human heredity :  | 2 |
|     | Important human characters and their inheritance; principles of eugenics.                             |   |
| 13. | Bacterial genetics :  | 1 |
|     | Bacterial mutation, conjugation and transduction.   |   |

#### PRINCIPLES OF MICROSCOPY 10

1. Elementary knowledge of the uses and working principles of light, interference, polarising, phase-contrast, ultraviolet and electron microscopes.

#### *Books recommended :*

1. De Robertis, E.D.P., Nowinski, W.W. and Saez, F.A. Cell Biology, W.B. Saunders and Co., Philadelphia, 1970 (Saunders International Student Edition : Toppan Co., Ltd., Tokyo, 1970).
2. Bourne, G.H. : Cytology and Cell Physiology. Academic Press, New York, 1964.
3. Brachet, J. and Mirsky, A.E. : The Cell (vols, II and III). Academic Press, New York, 1961.
4. Austin, C.R. : Fertilization. Prentice Hall Inc., Englewood Cliffs, N.J., 1965 (Indian reprint : Prentice Hall of India Pvt. Ltd., New Delhi, 1968).
5. Balinsky, B.I. An Introduction to Embryology (3rd edition), W.B. Saunders and Co., Philadelphia, 1973.
6. Gardner, E.J. : Principles of Genetics. John Wiley and Sons Inc., New York, 1968 (Indian reprint : Wiley Eastern Pvt., Ltd. New Delhi, 1972).

7. Winchester, A.M. : Genetics : A Survey of the Principles, of Heredity (3rd edition). Houghton Mifflin, New York, 1966 (Indian reprint : Oxford and IBH Publ. Co., New Delhi, 1972).
8. Sinnot, E.W., Dunn, L.C. and Dobzhansky, T. : Principles of Genetics. McGraw-Hill Book Co., New York, and later editions (International Student Edition : Kogakusha Co., Ltd., Tokyo, 1958).
9. Strickberger, M.W. : Genetics. Macmillan Co., New York, 1968.
10. Herskowitz, I.M. : Genetics. Little Brown & Co., Boston, 1965.
11. Slayter, E.M. : Optical Methods in Biology. Wiley Inter-Science, New York, 1970.

#### Paper IV— Evolution and Statistical Methods in Biology

3 hours duration

100 Marks.

Total number of lecture hours : 80

##### Evolution

50

#### 1. History of evolutionary thought :

2

- (a) Greek thought to Lamarck.
- (b) Darwin and theory of evolution.
- (c) The period after Darwin.

#### 2. The forces and mechanisms of evolution :

- (a) Variation : somatic and germinal variations; chromosomal variations; gene mutations; rate, direction and nature of mutations; natural and induced mutations; mutagens. 8

- (b) Genetic and quantitative aspects of evolution : Population as unit of evolution; gene frequency; gene pool; evolution the result of change in genetic pool; genetic equilibrium and Hardy-Weinberg law; mutation pressure; selection pressure; effects of population size; random and non-random reproduction; genetic drift (Sewall-Wright effect). 15

- (c) Isolation and its role in species formation :

- (i) Speciation : definition of species, sub-species and races; speciation a gradual or a sudden process ? 1

- (ii) Isolating mechanisms : geographical, ecological, physiological, biochemical, anatomical, developmental, behavioural, psychological and social. 4

- (iii) Effects of isolation : restriction of random dispersal and random mating; character displacement; reduction of fertility. 2
- (iv) Failure of isolating mechanisms : gene flow and migration; hybridization; heterosis. 1
- (d) Adaptations : diversity and nature of adaptations; adaptive radiations and occupation of new environments and niches; mimicry and coloration. 5
- (e) Ecology and evolution. 1
- (f) Natural selection : critical evaluation of the concepts of struggle for existence and survival of the fittest; the modern concept of natural selection; adaptation and differential reproduction; neodarwinism and neolamarckism. 8

### 3. Characteristics of evolution :

Extinction, replacement, irreversibility of specialization, etc. 3

### Statistical Methods in Biology

30

1. Objectives and significance; important terms and symbols; graphs ( bar diagrams, histograms, frequency polygons, line diagrams).
2. Frequency distributions and centering constants (Mean, median and mode).
3. Measures of variation (standard deviation, variance standard error of the mean).
4. Rates and ratios.
5. Sampling variation of proportions.
6. Significance of difference in proportions.
7. Chi-square test.
8. Correlation and regression.
9. t-test.

### Books recommended :

1. Simpson, G.G. : Major Features of Evolution. Columbia University Press, New York, 1953.
2. Dodson, E.O. : Evolution : Process and Product, Reinhold Book Corp., New York, 1960 ( Indian reprint : Affiliated East West Press, New Delhi, 1971).

3. Moody, P.A. : Introduction to Evolution (2nd edition). Harper and Row, New York, 1953 ( Harper International Student Reprint : John Weatherhill Inc., Tokyo, 1964).
4. Dobzhansky, T. : Genetics and the Origin of Species. Columbia University Press, New York; 1951 (Indian reprint : Oxford Book Co., New Delhi, 1968).
5. Merrell, D.J. : Evolution and Genetics : The Modern Theory of Evolution. Holt, Rinehart and Winston, New York, 1962.
6. Savage, J.M. : Evolution. Holt, Rinehart and Winston, New York, 1969 (Indian reprint : Amerind Publ. Co., New Delhi, 1970).
7. Simpson, G.G. and Beck, W.S. : Life : An Introduction to Biology (2nd edition). Harcourt, Brace and World Inc., New York 1965.
8. Weisz, P.B. : The Science of Biology (4th and later editions). McGraw-Hill Book Co., New York, 1970 (Indian reprint : Tata McGraw-Hill Publ. Co., New Delhi 1971).
9. Bancroft; H. : Introduction to Biostatistics. Harper and Row, New York, 1957.
10. Ipsen, J. and Feigl, P. : Bancroft's Introduction to Biostatistics (2nd revised edition). Harper and Row, Medical Department, New York, 1970.
11. Dunn, O. J. : Basic Statistics : A Primer for the Bio-medical Sciences. John Wiley and Sons Inc., New York, 1964.
12. Bailey, N.T.J. : Statistical Methods in Biology. Low Priced Text Book : English Language Book Society, London, 1959.

#### Practical work based on Papers I to IV

Total No. of laboratory hours 480

1. Invertebrates : 30  
Identification, classification and study of distinguishing features of important representatives from various groups (Protozoa through Hemichordata).
2. Study of permanent prepared slides (from Protozoa through Hemichordata).

3. **Anatomy :** 75
- (i) Reproductive, excretory, nervous and heamocoelomic systems of leech.
  - (ii) Reproductive system of cockroach; general anatomy, nervous and reproductive systems of grasshopper; nervous system of crab: nervous and reproductive systems of scorpion.
  - (iii) Nervous system of *Patella*, *Lamellidens*, *Mytilus*, *Sepia* and *Aplysia*; general anatomy of *Aplysia*.
  - (iv) Study of sections of the arm of a starfish; water vascular system of starfish; general anatomy of a holothurian; Aristotle's lantern of a sea-urchin : complete as well as disarticulated; arrangement of disarticulated parts of the Aristotle's lantern.
4. **Permanent preparations and their study** 60
- (i) Preparation of cultures of *Amoeba* and *Paramecium*; study of these protozoans using suitable vital dyes.
  - (ii) Permanent preparations and study of *Amoeba* and *Paramecium* from their cultures; of *Vorticella* and *Euglena* from the pond water; of *Opalina*, *Balantidium* and *Nyctotherus* from the rectum of frog; of the flagellates from the gut of white ant and housefly; of trypanosomes in the blood of house rat; and of life-cycle stages of *Monocystis* from the seminal vesicle of earthworm.
  - (iii) Collection and study of live *Hydra*, its fixation and permanent preparation.
  - (iv) Collection, fixation and permanent preparations of trematodes, cestodes and nematodes found in the alimentary canals and other parts of the bodies of frog, pigeon and predatory birds.
  - (v) Dissection of various structures in different animal types: permanent preparations and study of these structures.
  - (vi) Permanent preparations of different materials to be provided for study.
5. **Biological Chemistry :** 90
- 1. Identification of protein, carbohydrate and lipid in various tissues.
  - 2. Identification of different kinds of mono di and polysachharides in biological and chemical materials.
  - 3. Quantitative estimations of the following in various tissues :



- (a) Carbohydrates : glycogen, glucose and ascorbic acid.
  - (b) Proteins : total proteins.
  - (c) Lipids : phospholipids and cholesterol.
  - (d) Nucleic acids : DNA and RNA.
  - (e) Enzymes : acid and alkaline phosphatases.
- 4. Paper chromatography : unidimensional chromatography, using amino acids from chemical and biological materials.
  - 5. Paper electrophoresis : determination of serum protein through paper electrophoresis.
  - 6. Study of digestive enzymes in different parts of the alimentary canal (including salivary glands of the cockroach).
  - 7. Demonstration involving the use of spectrophotometry.
6. Physiology :
- 1. Demonstration of the use and operation of oscilloscope for recording neuroelectric activity and electrocardiogram.
  - 2. Kymographic recording of muscle twitch, summation of twitches, clonic contractions, tetanus, fatigue and stair case phenomenon from the sciatic nerve-muscle preparation of frog.
  - 3. Kymographic recording of the frog's heart beat and the study of the effect of electrical stimulation, various ligatures, drugs, etc.
  - 4. Study of spinal and convulsive reflexes in frog.
  - 5. Photometric determination of haemoglobin in blood sample.
  - 6. Demonstration of the following in blood : clotting time, erythrocyte sedimentation rate, haemolysis and crenation.
  - 7. Determination of blood urea value
  - 8. Radiation uptake in various tissues; elementary idea of using radioactivity detecting instruments.
7. Cell Biology :
- 1. Squash and smear preparations of testis of cockroach and grasshopper; aceto-orcein and Fielgen stainings of these preparations.

2. Study of mitosis in onion root tip and mammalian bone marrow cells.
3. Study of giant chromosomes in the salivary gland of *Chironemus* larva or *Drosophila*.
4. Vital and supravital stainings (with neutral red and Janus Green B) of cells of the testis of an insect or mammal to study the mitochondria.
5. Preparation of multipolar nerve cell from the spinal cord of a mammal.
6. Chromosome counts in cells of the testis of an insect or mammal or cells of the bone marrow of a mammal.
7. Study of prepared microscope slides, including those showing various cell types, mitosis, meiosis and giant chromosomes.

8. Genetics 30

1. Identification of male and female *Drosophila*.
2. Identification of wild and mutant forms of *Drosophila*.
3. Monohybrid and Dihybrid inheritances in *Drosophila*.
4. Simple problems based on mendelism to be done by the students.
5. Identification of blood groups in man.
6. Demonstration of sex chromatin.

9. Statistical Methods in Biology : 30

1. Preparation of frequency tables and graphs.
2. Calculation of standard deviation, variance and standard error of the mean.
3. Calculation of probability and significance between means using t-test.
4. Calculation of significance using Chi-square test.
5. Plotting the slope of a line on a graph; calculations of the slope of a line, coefficient correlation and regression.

*Note* : The above exercises shall be based on actual data obtained by candidates through field studies or experimental work. The candidates shall have to maintain a complete record of the work done.

## FINAL

## Paper I—Chordata and Developmental Biology of Chordates :

Total number of lecture hours : 80

Chordata 40

1. Origin and outline classification of the chordates. 2
2. Interrelationships of Hemichordata, Urochordata and Cephalochordata and their relations with other deuterostomes. 2
3. Life-histories of sessile and pelagic tunicates : an ascidian, *Pyrosoma*, *Salpa*, *Doliolum* and *Oikopleura*. 4
4. Neoteny. 1
5. Origin, evolution and adaptive radiation of vertebrates :
  - (a) Geological time-scale and fossils 1
  - (b) Origin, evolution and general characters of Agnatha (ostracoderms and cyclostomes). 3
  - (c) The early gnathostomes (placoderms). 1
  - (d) A general account of the Elasmobranchii, Holocephali, Dipnoi and Crossopterygii. 4
  - (e) Adaptive radiation in bony fishes. 2
  - (f) Origin evolution and adaptive radiation of Amphibia. 2
  - (g) Origin and evolution of reptiles : the conquest of land; Seymouria and related forms: Cotylosauria; basic skull types and outline classification of reptiles. 3
  - (h) Dinosaurs. 1
  - (i) Living reptiles : a brief account of the Rhynchocephalia, Chelonia, Crocodilia and Squamata. 3
  - (j) Origin and evolution of birds. 2
  - (k) Origin of flight: flight adaptations. 1
  - (l) Origin of mammals. 1
  - (m) Primitive mammals (Prototheria and Metatheria). 2
  - (n) A general survey of the main radiations in eutherian mammals, excluding detailed reference to individual orders. 2
  - (o) Evolution of man; relationshipships of man with other primates; fossil record of man's ancestry. 3

Developmental Biology of Chordates 40

1. Theories of Development : preformation and epigenesis. 1

2. **Oogenesis :** 3
  - (a) Growth of oocyte and vitellogenesis.
  - (b) Organization of egg cytoplasm; role of the egg cortex.
3. **Fertilization :** significance of fertilization for development and the essence of activation of the egg.
4. **Early embryonic development :**
  - (a) Patterns of cleavage, blastulation and gastrulation in chordates (tunicates to mammals). 5
  - (b) Fate maps. 1
  - (c) Morphogenetic movements. 1
  - (d) Mechanics and significance of gastrulation 1
5. **Causal basis of development :** primary embryonic induction :
  - (a) Concepts of potencies; prospective fates; progressive determination. 2
  - (b) Induction of the primitive nervous system (Spemann's primary organizer). 1
  - (c) Nature and regionally specific properties of the inductor. 1
  - (d) Competence. 1
  - (e) Abnormal (heterogenous) inductors. 1
  - (f) Chemistry and mechanisms of action of inducing substances. 1
6. **Organogenesis :**
  - (a) Morphogenetic processes in epithelia and mesenchyme in organ formation. 1
  - (b) Morphogenesis of the brain; neural crest cells and their derivatives, 3
  - (c) Development of the eye, heart and alimentary canal with accessory organs. 4
7. **Embryonic adaptations :**
  - (a) Evolution of the cleidoic egg and its structural and physiological adaptations. 1
  - (b) Development and physiology of the extra-embryonic membranes in amniotes. 2
  - (c) Evolution of viviparity. 2
  - (d) Development, types and physiology of the mammalian placenta. 1

## 8. Metamorphosis in Amphibia :

- (a) Structural and physiological changes during metamorphosis. 1
- (b) Endocrine control of metamorphosis. 1

## 9. Regeneration :

- (a) Types of regeneration (physiological, reparative and compensatory hypertrophy); regenerative ability in chordates. 2
- (b) Morphological and histological processes in amphibian limb regeneration. 2
- (c) Origin of cells for regeneration; dedifferentiation.

*Books recommended :*

1. Young J.Z. : The Life of Vertebrates. Oxford University Press, London, 1962 (Low Priced Text Reprint : English Language Book Society, London, 1962).
2. Romer, A.S. : Vertebrate Paleontology (3rd edition). University of Chicago Press, Chicago, 1956.
3. Dodson, E.O. : Evolution : Process and Product. Reinhold Book Corp., New York. 1960 (Indian reprint : Affiliated East West Press, New Delhi. 1971).
4. Colbert, E.H. : Evolution of the Vertebrates. John Wiley and sons Inc., New York, 1969 (Indian reprint : Wiley Eastern Pvt. Ltd., New Delhi, 1970).
5. Young, J.Z. : The Life of Mammals. Oxford University Press, London, 1963.
6. De Beer, G.R. Embryos and Ancestors. Oxford University Press, London, 1958.
7. Barrington, E.I.W. : The Biology of Hemichordata and Protochordata. Oliver and Boyd. London, 1965.
8. Berril, N.J. : The Tunicata. The Ray Society, London, 1950.
9. Newman, H.H. : The Phylum Chordata. Macmillan Co., New York, 1949.
10. Nelson, E.O. : Comparative Embryology of the Vertebrates. McGraw-Hill Book Co., New York, 1953.
11. Balinsky. B.I. : Introduction to Embryology (3rd edition). W.B. Saunders and Co., Philadelphia, 1973.
12. Saunders, Jr., J.W. : Patterns and Principles of Animal Development. Macmillan Co., New York, 1970.

13. Bodemer, C.W. : Modern Embryology. Holt, Rinehart and Winston, New York, 1968.
14. Berrill, N.J. : Developmental Biology. McGraw-Hill Book Co., New York, 1971.
15. Goss, R.J. : Principles of Regeneration. Academic Press, New York, 1969.

**Paper II—Animal Ecology and Ethology.**

3 hours duration

—100 marks

Total Number of Lecture hours : 80

**ANIMAL ECOLOGY 40**

1. View points in modern ecology : 1
2. Limiting factors : 1  
Liebig's law of minimum; Shelford's law of tolerance; combined concept of limiting factors; conditions of existence as regulatory factors.
3. Analysis of environment : 8
  - (a) The general environment.
  - (b) Role of physical factors : temperature, light water atmospheric gases; the media; molar forces; the substratum; climatology.
  - (c) Brief review of important physical factors as limiting factors.
  - (d) Biotic factors in animal environment : interactions among animals.
  - (e) Nutrients and environment.
4. Organisation at the special population level : 4
  - (a) General properties of population.
  - (b) Population growth : form and forces shaping the population growth.
  - (c) Measurement of population.
  - (d) Animal aggregation and social life.

*Note* :—Simple numerical problems on measurement of population to be done.

5. Organisation at the community level : 3
  - (a) Biotic community concept.
  - (b) Community structure and concept of community dominance.

- (c) Ecotones and concept of 'edge effect'.
  - (d) Pattern in communities : stratification, zonation, activity, food web, reproductive and social.
  - (e) Community *versus* the continuum.
  - (f) Evolution of community.
  - (g) Palaeecology : community structures in past ages.
6. Ecological regulations : 4
- (a) Succession in community : basic types of succession; convergence and divergence in succession; modifications in succession: concept of climax; monocl原因 *versus* polyclimax theory; barriers and ecesis in succession: the biome.
  - (b) Fluctuations within community irruptive and cyclic fluctuations; causes of fluctuations; cycles.
7. Environments and animals : the ecosystem : 8
- (a) Nature and constituents of ecosystem.
  - (b) Fundamental operation of ecosystem.
  - (c) Flow of matter and energy in ecosystem.
  - (d) Homeostasis in the ecosystem.
  - (e) Cycling of chemical elements in ecosystem.
  - (f) Concept of productivity; productivity of land and water.
8. Organisation and dynamics of ecological communities : 6
- The habitat approach : a detailed knowledge of extent, zonation, environment, biota. adaptations and communities of freshwater, marine terrestrial and estuarine areas.
9. The ecological outlook : 5
- Space ecology: nuclear radiation: pollution; resources and applied human ecology.

## ETHOLOGY

- 40
1. Introduction : 2
- Ethologic concept and its origin; general survey of various types of animal behaviour.
2. A general picture of the mammalian nervous system with special reference to the involvement of hypothalamus in the regulation of behaviour patterns. 3
3. Hormones and behaviour : 1
4. Types of behaviour and their regulation :

- (a) Feeding behaviour : 7
- (i) Components of feeding behaviour : hunger and drive; directional movement; avoidance; eating, carrying and hoarding.
- (ii) Factors influencing choice of food.
- (iii) Nervous regulation of food and energy intake.
- (b) Learning :  
Habituation; conditioned reflex; trial and error; latent learning; learning and discrimination; imprinting; neural mechanism of learning.
- (c) Instinctive behaviour : 1  
Concept, phyletic descent and physiology.
- (d) Motivated behaviour : 1  
drive; satiation and its neurophysiological control.
- (e) Social behaviour in primates : 8
- (i) Social signals; olfactory; tactile; visible; audible,
- (ii) Status; dominance and hierarchy; territorial behaviour; courtship and mating; aggression.
- (iii) Primate Societies.
- (f) Behaviour in birds : behaviour of *Streptopelia* (ring dove); homing and migration. 2
- (g) Reproductive behaviour in fish (stickleback or any other fish). 1
- (h) Social behaviour in insects : communications; concealment behaviour. 1
- (i) The role of pheromones (a general account). 1
5. Orientation : 2
- (a) Classification of various types of taxes and kinesis.
- (b) Flight orientation in the locust.
6. Methods of Studying behaviour : 2  
brain lesions; electrical stimulation; drug administration.

*Books recommended :*

1. Odum, E.P. : Fundamentals of Ecology (3rd edition). W.B. Saunders and Co., Philadelphia, 1972 Toppan International Edition : (Toppan Co. (Singapore) Pvt., Ltd., Singapore, 1972).



2. Knight, C.B. : Basic Concepts of Ecology. Macmillan Co., New York 1965.
3. Clark, G. L. : Elements of Ecology. John Wiley and Sons Inc., New York, 1954 ( Toppan International Edition : Toppan Co. (Singapore) Pvt. Ltd., Singapore, 1974).
4. Allee, W.C., Park, O., Emerson, A.E., Park T, and Schmidt, K. P. : Principles of Animal Ecology. W.B. Saunders and Co., Philadelphia, 1950.
5. Macan, T.T. : Freshwater Ecology. Longmans Green and Co., Ltd., London, 1963.
6. Pearse, A. S. : Animal Ecology. McGraw-Hill Book Co., New York. 1939.
7. Woodbury, A. M. : Principles of General Ecology, Blackiston Co., Inc., New York, 1954.
8. Neal. E. : Woodland Ecology. William Heinemann Ltd., London, 1953.
9. Elton, C.S., : Animal Ecology. Sedgwick and Jackson. London, 1957.
10. A. Macfadyen, A. : Animal Ecology. Isaac Pitman and Sons, London, 1957.
11. Dowdeswell, W.H. : Animal Ecology. Methuen and Co., London, 1952.
12. Reid, D. : Elementary Ecology. Allman & Sons London, 1959.
13. Barnett, S.A. : Study in Behaviour. Methuen and Co., London, 1963 (Methuen Science Paperback Reprint : Chapman and Hall, London, 1967).
14. Manning, A : An Introduction to Behaviour, Edward Arnold, London, 1972.
15. Carthy, J.D. : The Study of Behaviour. Edward Arnold, London, 1967.
16. Thorpe W.H. : Learning and Instinct in Animals (2nd edition). Methuen and Co., London, 1963.

17. Hinde, R.A. : Animal Behaviour (2nd edition). McGraw Hill Co., New York, 1970 Paperback).
18. Etkin W. : Social Behaviour and Organisation among, Vertebrates. University of Chicago Press, Chicago, 1964.
19. Morris, D. : Primate Ethology. Weidenfeld and Nicolson, London. 1967.
20. Altman, J. : Organic Foundation of Animal Behaviour, Holt, Rinehart and Winston, New York, 1966.

## SPECIALIZATIONS

### (a) Cell Biology

Paper III

3 hours duration—100

Total number of lecture hours—80

1. Concept of cell and cell theory :
2. Cell types :  
detailed structure of the different types of cells (nerve, muscle, germ, gland and blood cells). 10
3. Cell Membrane : 10
  - (a) A study of various models of the molecular structure of the cell membrane, as suggested by Davson and Danielli, Robertson, and Green: other recent views on the subject.
  - (b) Molecular structure of the specialized modifications of the cell membrane (cilia, flagella, myelin sheath, etc),
  - (c) Concept of cell surface : electrokinetic properties of cell surface, their role in intercellular inter-action in cell fusion, cell aggregation etc.
  - (d) Properties and functions of the cell membrane, with special reference to permeability.
4. Cytoplasm : 18
  - (a) Generalized structure and composition of the cytoplasm.
  - (b) Detailed discussion on the following cytoplasmic components, with special reference to the biochemical and physiological aspects :
    - (i) Endoplasmic reticulum.
    - (ii) Ribosomes.
    - (iii) Golgi body.

(iv) Mitochondria.

(v) Lysosomes, peroxisomes and other related particles.

(vi) Centrosomes.

5. Nucleus . 10
  - (a) Structure and functions of the nuclear envelop.
  - (b) Structure and chemical orgznization of the resting nucleus.
  - (c) Nucleus and nuclaolar extrusions.
  - (d) Chemistry and biosynthesis of nucleic acids.
6. Chromosomes : 10
  - (a) Structural, chemical and functiounal organtzation of the different types of chromosomes (autosomes, giant chromosomes, sex chromosomes, supernumerary chromosomes, etc.)
  - (b) Chromosomal aberration
  - (c) Variation and evolution of chromosome numbers.
7. Cell Division : 10
  - (a) Detailed structural, chemical and physiological study of mitotic and meiotic divisions, with special reference to the mechanism of chromosome movement and organization of the spindle apparatus.
  - (b) Mitotic poisons and their action.
  - (c) Polyploidy.
  - (d) Polysomy.
8. Gametogenesis : 10
  - (a) Cytological, cytochemical and endocrinological studies on the developing male and female germ cells.
  - (b) Physiology of ovum and spermatozoan.
  - (c) Physiology of the union of gametes and the acrosome reaction.

Paper IV

3 hours duration

100 marks.

Total number of lecture hours : 80

1. Specialized functions of the cytoplasmic components in a cell with special reference to the molecular mechanism (contractibility, conductivity, secretion, phagocytosis and pinocytosis).
- 2- Cell and tissue culture : 5
  - (a) Behaviour of cells in culture.

- (b) Primary and established cell lines; kinetics of cell growth,
  - (c) Natural and defined media for culture.
  - (d) Importance of cell and tissue culture.
3. Chemical basis of fixation' and 'staining' and a discussion on the following techniques : 15

  - (a) Freeze substitution.
  - (b) Freeze drying.
  - (c) Fresh and fixed frozen sections.
  - (d) Intravital and supravital staining.
  - (e) Microincineration.
  - (f) PAS, Metachromasia, Feulgen, lipid and protein staining techniques.
  - (g) Centrifugation and ultracentrifugation.
  - (h) Single, two dimensional and column chromatography.
  - (i) Paper, gel, disc and cell electrophoreses.
4. Elementary concept of the principle and theory of microscopy, as exemplified by the following : 10

  - (a) Phase-contrast microscopy.
  - (b) Interference microscopy.
  - (c) Polarizing microscopy.
  - (d) Fluorescence microscopy.
  - (e) Electron microscopy.
  - (f) Ultra-violet microscopy.
5. A general account of the effect of ionizing radiation at the cellular level.
6. Generalized account of the mechanism of cell aggregation during development *in vitro* and studies. 4
7. Role and mechanism of action of the following enzymes at the cellular level :

  - (a) ATPase.
  - (b) Succinic dehydrogenase.
  - (c) Acid and alkaline phosphatases.
  - (d) Hyaluronidase.
8. Elementary ideas of the cellular origin of diseases : 10

  - (a) Convulsive (epileptic) activity.
  - (b) Cancer.
  - (c) Lipidosis.
  - (d) Glycogen-storage disease.
9. Cellular aspects of the process of aging. 4

## 10. Cellular aspects of immunity and virus-cell interaction. 5

## (b) Developmental Biology

Paper III 3 hours duration 100 marks.

Total number of lecture hours : 80

1. History of embryology; theories of development; scope of developmental biology. 5
2. Reproductive cycle and breeding habits in vertebrates. 3
3. Ovulation and its control; induced breeding. 3
4. Organization of egg cytoplasm for development; egg cortex; origin of polarity and symmetry in eggs. 3
5. Fertilization : gynogamones and androgamones; biochemistry of fertilization; egg activation; parthenogenesis; biology and viability of sperms and ova; sperm banks; artificial insemination; fertilization of mammalian ova *in vitro*—their cultivation and reimplantation and the significance of this technique. 6
6. Cleavage : role of nucleus; problem of DNA synthesis; energy requirements; biochemical changes and distribution of cytoplasmic substances during cleavage; characteristics of cleavage. 2
7. Early embryonic development in selected non-chordates (Coelenterata, Ctenophora, Platyhelminthes, Annelida, Mollusca, Echinodermata, Insecta and Chordata) with particular reference to types of eggs, patterns of cleavage (radial, bilateral, spiral, cell lineage, super-types), blastulation, gastrulation, establishment of the germ layers and the basic body plan. 12
8. Morphogenetic cell movement; dissociation and reaggregation of cells; selective affinities of cells during morphogenesis. 4
9. Fate maps: methods of their constructions and their utility; comparative topographical relationship of the presumptive areas in early embryos of *Amphioxus* fishes, amphibians and birds. 2

## 10. Cell and tissue interactions in development :

- (a) Concepts of prospective fate; potencies; determination: autonomous and dependent—differentiation. 1

- (b) Primary embryonic induction : induction and determination of the neural plate in chordates; nature and regionally specific properties of the primary inductor; methods of study and analysis of the phenomenon of neural induction (transplantation; implantation; explantation; histochemical, immunological, radiobiological techniques, etc); heterogenous (adnormal) inductors; chemistry and properties of inducing substances; competence; mechanism and theories of induction; secondary and tertiary inductors; Spemann's organizer; evocation and individuation. 10
- (c) Progressive determination : gradual restriction of the development potencies of the germ layers of amphibian and chick embryos. 2
- (d) Mosaic and regulative eggs—a problem of determination. 2
- (e) Transdetermination in insect germinal discs. 2
- (f) Ectodermal-mesodermal interactions in the morphogenesis of limbs in vertebrates; the role of apical ridge. 3
- (g) Inductive interactions in the morphogenesis and differentiation of the eye in vertebrates. 3
- (h) Origin and development of nerve cells and nerve fibers; relationship between centre and periphery in nerve growth. 3
- (i) Computer analysis of cellular interactions. 1
- 11. Gradients : the concept; Child's hypothesis; metabolic differences in embryonic cell; biochemical gradients in sea-urchin eggs and their morphogenetic importance 4
- 12. Morphogenetic Fields : the concept; nature and temporal character of fields; progressive determinations within a field. 4
- 13. Development of pattern : feather pattern in birds; wing pattern in insects. 5

Paper—IV

3 hours duration

100 marks

Total number of lecture hours : 80

## 1. Differentiation :

- (a) Definition; Biochemical basis of differentiation; structural and biochemical changes during differentiation of

muscle, cartilage, vertebrate pigment cells, lens and lens fibres. mammalian erythroid cells and epidermis.

- (b) Chemical control of differentiation; influence of animalizing and vegetalizing agents on sea urchin.
- (c) Influence of hormones on differentiation of tissues and organs. 2

## 2. Developmental genetics :

- (a) Role of nucleus and cytoplasm in development. 2
- (b) Nuclear transplation in amphibia; merogons. 3
- (c) Somatic cell hybridization. 1
- (d) Effects of maternal genes on development of embryo. 1
- (e) Differential gene function during development : chromosomal puffing; differential synthesis and utilization of various types of RNA during embryogenesis (sea urchins; amphibians); changing patterns of protein synthesis during development (lactate dehydrogenases; haemoglobins; antigens and antibodies). 7
- (f) Cell death in morphogenesis. 2

## 3. Aging :

Changes in cell structure and function during aging; possible mechanisms of aging. 2

## 4. Teratology :

Types of anomalies; genetic effects (pleiotropism; phenocopies; canalization; inborn errors in metabolism); environmental effects : teratogenic agents (drugs, nutritional deficiencies, infections, ionizing radiations, etc.), general mechanisms and mode of action of teratogenic agents; embryological considerations in teratology; twinning. 6

## 5. Abnormal growth :

- (a) Teratomas.
- (b) Malignancy : general characteristics and properties of cancer cell, including structural and metabolic alterations in these cells; metaplasia; carcinogenic agents. 5

## 6. Regeneration :

20

- (a) Definition; characteristics of regeneration and its comparison with ontogenetic development.
- (b) Distribution of regenerative ability in the Animal Kingdom.

- (c) Regeneration in Hydra.
  - (d) Regeneration in Planaria.
  - (e) Appendage regeneration in arthropods and its relation with molting and metamorphosis; heteromorphosis; autotomy.
  - (f) Regeneration in vertebrates with special emphasis on morphological and histological study of this phenomenon on tail regeneration (ammocoetes; anurans; urodelans; lizards); limb regeneration (anurans; urodelans). and wolffian lens regeneration (urodelans).
  - (g) Source of cells for regeneration; dedifferentiation potencies and convertibility of dedifferentiated cells; the problem of reversibility, irreversibility of differentiated cells; modulation.
  - (h) Patterns of wound healing and regeneration.
  - (i) Role of nerves and hormones in regeneration.
  - (j) Loss and restoration of ability of organ regeneration in vertebrates.
  - (k) Liver regeneration in mammals.
7. Methods of preparation and utility of normal tables of embryonic and larval development stages. 2
  8. Embryonic Nutrition : yolk utilization by embryos of invertebrates and vertebrates; fetal nutrition in mammals; placental physiology. 3
  9. **Metamorphosis** : metamorphosis, and its hormonal control in insects; morphological, physiological and biochemical changes during metamorphosis in amphibians and its endocrine control. 5
  10. **Cell, tissue and organ culture** : 10
    - (a) Basic requirements; design of the laboratory.
    - (b) Balanced salt solutions; pH control; use of antibiotics.
    - (c) Culture media : natural and chemically defined.
    - (d) Methods of preparing cells, tissues and organs for cultivation *in vitro*.
    - (e) A critical appreciation of some of the main methods of cell, tissue and organ culture.
    - (f) Contribution of cell, tissue and organ culture studies to developmental biology, medicine etc.



**(C) Endocrinology**

Paper III—

3 hours Duration

100 marks

Total number of lecture hours : 80

1. Historical background, scope and status of endocrinology. 2
2. Study of the following major endocrine glands of vertebrates :
  - (a) Pituitary : 12  
General, developmental and comparative anatomy; functional cytology of the pituitary gland and mammalian and sub-mammalian vertebrates; adenohypophyseal hormones : their chemistry and physiology; chromatophore regulation among vertebrates; neurohormonal peptides : their chemistry and phyletic distribution; formation, storage, release and transport of neurohypophyseal principles; effects of hypophysectomy, pituitary stalk section and transplantation.
  - (b) Thyroid : 6  
General, developmental and comparative anatomy; evolution of thyroidal function; biochemistry of thyroid hormones; biological actions of thyroid hormones and their interrelationship with other endocrine secretions; effects of thyroidectomy; calcitonin its chemistry and physiology.
  - (c) Parathyroid ; 2  
General, developmental and comparative anatomy; biochemistry and physiology of the parathyroid hormone; effects of parathyroidectomy.
  - (d) Pancreatic Islets : 4  
General, developmental and comparative anatomy; biochemistry and physiology of insulin and glucagon; effects of pancreatotomy.
  - (e) Adrenal • 11  
General developmental and comparative anatomy; chromaffin tissue : biochemistry and physiology of catecholamines; the sympathetico-chromaffin complex; steroidogenic tissue : structure and nomenclature of steroid hormones; effects of adrenalectomy.
  - (f) Pineal : 3  
General, developmental and comparative anatomy; biochemistry and physiology the pineal principles.

3. Chemical messenger : 3  
Mechanism of hormone action.
4. Endocrine integration :  
Diffuse effects of hormones; neoplastic growth; migration in birds and fishes; bird plumage, hibernation; osmoregulation; blood pressure regulation.
5. Vertebrate neuroendocrinology : 18  
Ultrastructure and function of the neuro-secretory cell; hypothalamo-hypophyseal relationship: hypothalamus in relation to higher nervous centres; other neurosecretory systems in vertebrates: the urophysis; the subcommissural organ and the pineal complex.
6. Invertebrate neuroendocrinology : 12  
Anatomy and physiology of the endocrine and neuro-endocrine systems of Annelida, Arthropoda and mollusca.

## Paper IV—

3 hours duration—100 marks

Total number of lecture hours : 80

1. Hormonal control of sex differentiation; nuclear sex. 5
2. The female reproductive system : 6  
Comparative anatomy and physiology of the mammalian and sub-mammalian ovary and sex accessory structures; ovarian hormones and their functions.
3. The Male reproductive system : 9  
Comparative anatomy and physiology of the mammalian and sub-mammalian testis and sex accessory structures, semen and its biochemistry, testicular hormones and their functions.
4. The gonadal-hypophyseal-hypothalamus relationship. 2
5. Breeding seasons in vertebrates; evolution of viviparity; induced spawning in fish and frog. 4
6. Endocrinology of fertilization, implantation, delayed implantation parturition and lactation. 10
7. Placenta as an endocrine tissue; foetoplacental unit. 4

8. Functional aspects of chemical, mechanical and surgical control of male fertility in laboratory mammals and the human. 8
9. Functional aspects of chemical, mechanical and surgical control of female fertility in laboratory mammals and the human. 8
10. Pheromones : 3  
Control of fertility in insects.
11. Prostaglandins : 6  
Types, chemistry, mechanism of action and their effects on mammalian reproduction.
12. Adaptation syndrome. 5
13. Hormonal imbalance and major endocrine diseases : 10
  - (a) Gigantism.
  - (b) Acromegaly.
  - (c) Dwarfism.
  - (d) Addison's disease.
  - (e) Cushing's syndrome.
  - (f) Goitre.
  - (g) Cryptorchidism.
  - (h) Hypogonadism.
  - (i) Amenorrhoea.
  - (j) Diabetes mellitus.
  - (k) Tetany.

#### (D) ENTOMOLOGY

Paper III—

3 hours duration : 100 marks

Total number of lecture hours : 80

1. Insect head, thorax, abdomen and their appendages. 8
2. Integument. 2
3. Muscular, digestive, circulatory, respiratory, excretory, reproductive, nervous, and endocrine systems: sense organs; sound and light producing organs. 30
4. Classification of insects upto orders and sub-orders. 5
5. Detailed classification upto important and selected super families and families of the following orders of economic importance : 28

Orthoptera, Isoptera, Homoptera, Heteroptera, Lepidoptera, Diptera and Hymenoptera.

6. Social life in Isoptera and Hymenoptera; caste determination in social insects; life cycle of aphids. 4

7. A general idea of fossil insects; evolution of insects. 3

#### Paper IV—

3 hours duration : 100 marks

Total number of lecture hours : 80

1. General idea of damage caused by pests. 1
2. Principal methods of pest control. 6
3. Insecticides : their chief types, mode of action and methods of application; a general idea of appliances used in the application of insecticides and their safe handling. 10
4. A general knowledge of chemosterilants, attractants, repellants, pheromones, growth regulators and other compounds. 4
5. Development of resistance to chemicals. 1
6. Life history, damage caused and control of 3 major pests of the main crops. 8  
wheat, paddy, maize, jowar, millet, sugarcane, cotton and oil seeds.
7. Stored grain pests (including general idea of storage). 2
8. A general idea of plant protection organizations in India. 2
9. Beneficial insects : silkworm, honey bee and lac insect and industries related to them. 4
10. Important insects used for biological control. 2
11. Ecology : Effects of physical factors; 20  
Intraspecific and interspecific relations: dynamics of population.
12. Embryology : Embryonic and post-embryonic development; 20  
physiology of development: unusual types of development; diapause.

**(e) Fish Biology****Paper III**

3 hours duration

100 marks.

Total number of lecture hours : 80

1. General account and phylogenetic significance of ostracoderms and placoderms. 3
2. Classification of fishes, with distinguishing characters of the principal subdivisions. 5
3. Origin and adaptive radiation of various groups. 15
4. Geographical distribution. 2
5. Body-form and locomotion. 2
6. Integument and exoskeleton 2
7. Structure, modifications and functions of fins. 2
8. Theories of origin of median and paired fins. 2
9. Endoskeleton. 3
10. Musculature. 2
11. Food and alimentary canal; physiology of digestion. 2
12. Blood vascular system and circulation of blood. 3
13. Respiratory organs, physiology of respiration and regulation of breathing; air-breathing organs. 10
14. Structure, functions and physiology of the swimbladder. 6
15. Weberian apparatus. 2
16. Excretory organs and the physiology of excretion; osmoregulation. 4
17. Nervous system and sense organs. 5
18. Endocrine glands; hormones and reproductive behaviour; gonads, reproduction, development and hatching; viviparity. 10

**Paper IV**

3 hours duration

100 marks

Total number of lecture hours : 80

1. A general survey of world fisheries; survey of principal fisheries of India (fresh-water, estuarine and marine). 10
2. Plankton in relation to fisheries. 3
3. The biology of Indian major carps, catfishes, *Hilsa*, sardine, mackerel, sharks, prawns and oysters. 8

4. Pisciculture and its importance, with special reference to India. 4
5. A brief outline on the methods of fishing in fresh-waters of India. 2
6. Biochemical composition of fish; fish as food. 4
7. By products of fishing industry, with special reference to India. 4
8. Ecological factors affecting the life of fishes; marine ecosystems. 4
9. Fish and mankind. 1
10. Age and growth studies. 3
11. Estimation of population number and mortality rates in fresh waters. 2
12. Fecundity; eggs and life history (including a generalised classification of maturity stages); estimation of fish production, with special reference to fresh-waters. 7
13. Aquaria and their uses, setting up and maintenance of aquaria. 2
14. Exotic fishes and their role in Indian fresh-waters. 2
15. Diseases of fishes (symptoms, etiology and treatment). 5
16. The problem of water pollution in relation to fisheries with special reference to India. 3
17. Coloration. 1
18. Bioluminescence. 2
19. Electric organs. 2
20. Poisons and venoms. 1
21. Sound-producing organs. 2
22. Courtship and parental care; a general study of fish behaviour. 3
23. Migration and its causes. 3
24. Conditions of life in hill-streams and the deep sea; adaptations in fish living in these habitats. 2

#### (F) PHYSIOLOGY

Paper III

3 hours duration—100 marks

Total number of lecture hours—80

1. Membrane Physiology : 11
  - (a) Cell surface; its electrokinetic properties and their biological significance; mechanism of involvement in cell-to-cell interactions.

- (b) Physiology and biophysics of intercellular communication :
    - (i) Biophysical mechanisms involved in the transfer of ions and molecules through intercellular junctional complex.
    - (ii) Biological significance of intercellular communication in organ growth, organ function, organ regeneration, cell recognition, electrical coupling, induction of immune response and correction of mutant phenotypes.
  - (c) Biochemistry and biophysics of such membrane functions as transport, electrogenicity, metabolism, exogenous factor-membrane interactions, etc.
2. General and intermediary metabolism : 7
- (a) Detailed knowledge of the biochemical aspects of sequential reactions involved in animal metabolism of carbohydrate, fat and protein.
  - (b) Bioenergetics of ATP and other energy rich compounds; mechanism of ATP-energisation of biosynthetic and biomechanical reactions.
3. Physicochemical mechanism in the transport of gases by body fluids : 6
- blood and the role of cellular and chemical constituents: mechanism of capillary exchange of gases and other materials: formation and functions of tissue fluid.
4. Localisation of biochemical functions to cellular structures: 6
- physicochemical relationship among subcellular organelles and compartmentation of biological and biochemical functions in the cell :
- (a) physiology of intracellular transport system (endoplasmic reticulum, Golgi, lysosome, nucleus, etc).
  - (b) Intracellular cyclic nucleotides and regulation of intracellular metabolic functions.
5. Physiology of bioluminescence. 3
- (a) Mechanism of chemiluminescent reactions.
  - (b) Functional significance of bioluminescence.
6. Preliminary knowledge of utility and application of the following in biological investigation: 7

Spectrophotometers; oscilloscopes; electronic stimulators; amplifiers, recorders; centrifuges; electrophoresis and microelectrophoresis set up; pH meters; chromatography equipment; radioactivity detectors.

7. Physiochemical mechanisms of water (osmotic and electrolyte (inorganic ions) balance in response to different environmental conditions in various animal groups. 4
8. Comparative biochemistry of the digestive enzymes. biochemical adaptations to diet, stimulation and secretion of digestive juices. physiology of the absorption of various types of digested foods; microbial fermentation and digestion of certain food constituents. 4
9. Biophysics of integumentary, tracheal, gill and pulmonary respiration, salient physiological features of these respiratory mechanisms in various groups of animals. 4
10. Physiology and biochemistry of ammonotelic, ureotelic, uricotelic excretions in representative groups of animals; evolution of excretory pathways in invertebrates and vertebrates; mechanism of function in nephridia, nephron, malpighian tubule etc.
11. Intermediary metabolism : 4  
phylogenetic distribution of the glycolytic and gluconeogenic pathways in various animal groups (parasitic helminths, molluscs, insects etc.); comparative aspects of the metabolism of lipids and proteins.
12. Comparative account of the functioning of hearts in various vertebrate and invertebrate groups; cardiac cycles in neurogenic and myogenic hearts; circulatory patterns in various group of vertebrates and invertebrates; physiologic characteristic features of the blood of various groups of vertebrates and invertebrates; distribution of various types of blood pigments, their functioning and mechanism of action. 4
13. Physiological organisation of central and peripheral nervous systems in invertebrates and vertebrates; evolution of the reflex arc patterns and division into central and peripheral nervous systems; evolution of cerebral cortex and physiological relationships among the topographical regions of brain comparative aspects of neurotransmitters and synaptic organisation; comparative aspects of axonal conduction; differences in nature of ions involved in nerve impulse



genesis physiological mechanisms and significance of giant fibre systems. 4

14. Physiology of intersegmental stretch receptors in crustaceans; vertebrate muscle spindles; physiology of vibration sense reception (lateral line organs), sound reception, phonoreception and sound production in insects; physiology of equilibrium receptors in invertebrates (orientation to gravity), electroreceptors in fishes; physiology of photoreception and vision; the cytophysiological organisation of photoreceptors in invertebrates and vertebrates, physiological aspects of chemoreception in fishes, amphibians, birds and mammals.
15. Functional organisation of vertebrate and invertebrate muscles; vertebrate and invertebrate motor-units; fibrillar architecture of muscles in coelenterates, arthropods, molluscs enchinoderms and vertebrates.
16. Endocrine mechanisms in invertebrates (insects, crustaceans, molluscs, etc.); comparative functional organisation of endocrine glands in various vertebrate groups.
17. Physiology of reproduction 3
  - (a) General physiological aspects of the control of testicular and ovarian functions, in vertebrates; photoperiods and reproductive activities; effect of various other environmental factors on reproductive physiology.
  - (b) Comparative physiology of fertilization.
  - (c) Hormones and reproduction in invertebrates (insects, annelids, molluscs, crustaceans and echinoderms), physiology of molting in insects crustaceans.

Paper IV—

3 hours duration—100 marks

Total number of lecture hours : 80

*Note* :—The study of this paper is mainly based on mammalian physiology.

1. Integumentary system : Functions and functional adaptations of integumentary system : absorbing and excretory capacities of the skin; mechanism of regulation of heat by the skin; mechanism of functioning of skin glands and receptors; mechanism of chromatophore function and colour change. 7

2. **Digestive system :** Mechanism of secretion (including hormonal and nervous regulation), composition and action of all types of digestive juices at the molecular level in the mammalian digestive pathway; microbial fermentation and digestive activity; morphofunctional specialisation of the absorptive epithelium and physiological mechanisms involved in the absorption of various types of end products of digestion; liver regulation of absorbed products with particular emphasis on cellular level and chemical mechanisms involved. 8
3. **Respiratory system :** Mechanism of ventilation and nervous regulation of breathing; biophysics and chemistry of exchange of gases at lung epithelium, factors influencing respiration; cellular and chemical mechanisms involved in the carriage of oxygen and carbon-di-oxide through blood. 6
4. **Voice organs and mechanism of sound production :** 2
5. **Blood and Circulation :** 8
  - (a) **Cytophysiology of hematopoiesis and leukocyte genesis;** physiological functions associated with all types of blood cells and plasma constituents; chemistry and physiology of blood clotting; physiology of homeostasis and blood.
  - (b) **Physiology and biophysics of the cardiac cycle;** neural regulation of heart function; physiological significance of the plan of the circulatory system and significant physiological characteristics of specialised microcirculations (cerebral, coronary, hepatic and renal circulations).
6. **Excretory system :** Sites and the chemistry of formation of various nitrogenous excretory products; biophysics and physiology of various functions performed by the nephron; physiological specialization of the urinary bladder epithelium, bladder function and micturition. 6
7. **Bone :** Chemical constitution and functional architecture of the bone tissue (including cartilage); nutrition, neural innervation, and metabolism in bone tissue. 3
8. **Muscle system :** 8
 

Chemical and electrophysiology of the neuromuscular junction; biophysics, biochemistry and physiology of

muscle contraction and relaxation processes; physiological and biochemical properties of cardiac, skeletal and visceral muscles; nerve supply and trophic functions, chemistry and denervation, chemical physiology of dystrophy.

9. Nervous system :

10

- (a) Physiological, biophysical molecular-biological basis of various concepts on nerve-impulse genesis, conduction and synaptic transmission of nerve impulse in central and peripheral nervous systems; physiology of integration and computation of neural signals in the nervous tissue, functional architecture of the nervous tissue and computer design.
- (b) Physiology of the reflex arc; reflex arc and action as the functional unit of neural organisation and function.
- (c) Physiology of synapses, learning and memory; cellular, chemical and molecular basis of learning and memory.
- (d) Chemical architecture of the nerve cell, energy sources, biogenic amines and neurotransmitters pathways involving GABA and glutamic acid in relation to inhibitory and excitatory functions.
- (e) Physiological topography of the mammalian brain; visceral functions associated with the major parts and nuclei (centers) of the brain.
- (f) Neurophysiological basis of sleep and wakefulness; electrical and physiological activity of the cerebral cortex.

10. Receptor system :

8

A General account of the biophysics and biochemistry of stimulus-transduction (stimulus-receptor interaction); functional organisation of major pathways carrying sensory information into the central nervous system; examples and physiological basis of classification of receptors; physiology of sensory information processing in retina, organ of Corti, olfactory epithelium and such simple receptor endings as the Pacinian corpuscle.

11. Endocrine system :

8

- (a) Functional organisation of neurosecretory centres in hypothalamus: physiology and neurochemistry of the hypothalamic control of pituitary function.

- (b) Cellular mechanisms of hormone action in target tissues : involvement of cell-membrane sites and intracellular cyclic nucleotide levels in causing hormone response.
- (c) Genesis, functions and kinds of hormones secreted by various endocrine glands (pituitary: thyroid, parathyroid, adrenal, islets of Langerhans; testis and ovary).

12. Reproductive system : 6

- (a) Functional organisation in sperm and ovum (including Graafian follicle); survival of sperm in female tract (capacitation); major biophysical and biochemical events during sperm-ovum union; physiology of implantation, hormonal control of uterine activity, physiology of placenta and parturition.
- (b) Mechanism of hormonal control of testis and ovary functions, estrous and menstrual cycles, mechanism of ovulation, including neural control of ovulation.

(G) RADIATION BIOLOGY

Paper III—

3 hours Duration

100 Marks.

Total number of lecture hours : 80

1. Structure of the atom :  
Mass number: atomic number; isotopes and isobars; theories of atomic structure. 4
2. Radioactivity :  
Types of radiation; natural and artificial radioactivity; ionization and excitation; radioactive decay; nuclear transformations: physical, biological effective half-lives. 4
3. Units of radioactivity :  
The electron volt; Curie; Roentgen; rep; rem; rad. 2
4. Interaction of radiation with matter :  
Photoelectric effect, Compton effect; pair production. 3
5. Health physics and radiation protection :  
external hazard: sealed and unsealed sources, including neutron source; personnel dose control; personnel moni-

equipment (film badge and pocket dosimeter); internal radiation hazard; maximum permissible dose; decontamination; waste disposal. 10

6. Linear energy transfer and relative biological effectiveness. 4
7. Radiation chemistry of water; target and toxic theories; single and multiple hits. 3
8. Radiation biometry :  
Statistics in radiobiology; graphic analysis of dose-response data; cell population kinetics, analysis of cell survival curves. 13
9. Radioactivity measuring instruments :  
Ionization chamber; proportional counter; Geiger-Muller counters (window and gas-flow); scintillation counters (crystal and liquid); countrate-meters; scalers; gamma-ray Spectrometers. 10
10. General procedure for radioassay :  
Treatment of samples, collections, weighing and ashing considerations in counting procedures (self absorption and back scattering); statistical evaluation of counting errors; experssion of data. 10
11. Autoradiography :  
Principle of autoradiography; dosage and exposure time; specific techniques (stripping film and liquid emulsion); autoradiography at macro-micro and ultra-structure level. 10
12. Paper radiochromatography :  
General methods; application of solvents, detection of spots and quantitative aspects. 4
13. Radiation activation analysis. 2
14. Laboration design and equipment :  
floor and room plans; hood and globe box; isotope storage, remote-handling equipment. 4

Paper IV—

\* 3 hours Duration

100 marks

Total number of lecture hours : 80

1. Principles of tracer methodology : basic difficulties, multiple tracer techniques. 3
2. Simple dynamic systems : single and multiple compartment systems. 5
3. Body composition and electrolyte studies. 2
4. Blood volume and haematology. 4
5. Iron metabolism. 2
6. Thyroid function tests and localization studies. 6
7. Intestinal absorption studies with  $^{131}\text{I}$ —labelled fat and protein. 2
8. Isotope diagnosis and therapy : neoplasia, cellular control mechanisms and causes, dose-fractionation. oxygen effect in radiotherapy. 6
9. Chemical protection and sensitization : modification of radiation response and its measurement; mechanism of chemical and biological protection; chemical sensitization and clinical radiotherapy. 6
10. Radioimmunoassay. 4
11. Radiation syndrome : 2  
Central nervous system; gastrointestinal system; haematopoietic system.
12. Effect of radiation on macromolecules : 5  
Nucleic acids; amino-acids; enzymes and proteins; lipids,
13. Immediate effect of radiation on cell division, morphology and viability. 3
14. Radiation genetics : 7  
Radiation-induced chromosomal aberrations; dose-yield kinetics; radiation mutation.
15. Recovery and repair : 3  
Repair of radiation damage in mammalian cell population; sublethal damage and repair, in vivo cell survival curves; repair of DNA in irradiated mammalian cells.

16. **Cell population kinetics :** 4  
Cell cycle techniques of cell population kinetics cell renewal system.
17. **Histo-pathological studies of effects of radiation :** 12  
Gastro-intestinal tract with associated glands, haemato-poietic system and blood, reproductive system, prenatal and postnatal development.
18. **Radiation carcinogenesis :** 4  
Leukaemia, ageing, reduction in life-span, age and sex-dependence, dose-response relationships.

### (H) TOXICOLOGY

Paper III—

3 hours duration

100 marks

Total number of lecture hours : 80

1. A general survey of animal pests of the household, food crops and stored food products. 8
2. Factors influencing the distribution & abundance of animals, causing them to become pests. 2
3. **Methods of pest control :** 10  
Physical, chemical, biological, cultural and mechanical; genetic manipulations.
4. An elementary study of the following in insects affected by insecticides and chemosterilants; 20
  - (a) Digestive system.
  - (b) Blood vascular system.
  - (c) Respiratory system.
  - (d) Nervous system.
  - (e) Reproductive system.
  - (f) Endocrine system.
  - (g) Development.

**Effects of insecticides and chemosterilants on insects :** 18  
General, cytological and molecular.

6. **Avian toxicology ,** 3  
A brief study of avicides and their effects on birds.

7. **Mammalian toxicology :** 4  
A brief study of toxicants and effects on mammals; rodenticides and rodent control.
8. **Joint action of insecticides and chemosterilants :** 2
  - a. Introduction.
  - b. Types of joint action.
  - c. Synergism.
  - d. Action of synergists. 5
9. **Persistence of toxic residues, leading to environmental pollution, occurrence of pesticide residues in plants, animals, food, environment (including soil and water), and human tissues the consequences of the occurrence of pesticides residues.** 5
10. **Resistance to toxicants :** 4  
Origin and development of resistance, biochemical and physiological implications of resistance, cross tolerance of resistant insects, biochemistry of resistance in the housefly.
11. **Toxic hazards of insecticides and chemosterillants to human beings, domestic animals, fish and wild life; a general survey of current methods employed for the control of these hazards.** 4

**Paper IV—**

3 hours duration : 100 marks

Total number of lecture hours : 80

1. **Classification of insecticides :** 2  
contact poisons, fumigants, stomach poisons and systemic insecticides.
2. **Soil insecticides :** 3  
Chemicals used as soil insecticides and methods of their application; distribution of insecticides in the soil; assessment of toxicity of soil insecticides and their effects on plants and micro-organisms.
3. **Chemistry :** 18  
Relation between chemical structure and toxicity, and mode of action of the following insecticides :
  - (a) Inorganic insecticides.
  - (b) Organochlorine insecticides.
  - (c) Organophosphorus compounds.
  - (d) Plant extractives.



- (e) Plant products.
- (f) Miscellaneous insecticides.

4. Chemosterilization : 10  
Principles of chemosterilization : chemistry, types and modes of action of chemosterilants (alkylating agents, antimetabolites and miscellaneous agents).
5. Hormones as insecticides : 4  
A short account of the occurrence, chemical structure and modes of action of hormones showing insecticidal activity.
6. An elementary study of industrial toxicology : 3
7. Methodology for testing the efficacy of toxicants and chemosterilants : 13
  - (a) General principles.
  - (b) Standardization and handling of animals for testing.
  - (c) Laboratory spraying and dusting.
  - (d) Injection, feeding and topical application.
  - (e) Screening, mode of administration and dose response relationship of chemosterilants.
  - (f) Fumigation : properties of gases and vapours; measurement of physical and chemical factors; methods of testing insecticidal fumigants.
8. Analysis and estimation of toxicants : 7  
Including bioassay of residual toxicity and its persistence.
9. Factors affecting the animals during exposure to toxicants. 4
10. Evolution of pesticide analysis. 4
11. Toxicological statistics : 12
  - (a) Measurement of toxicity or susceptibility by quantal response.
  - (b) Statistical procedures.
  - (c) Relative potency.
  - (d) The Probit plane.
  - (e) Statistics of the joint action of insecticides.
  - (f) Significance of regression line slopes.

*Books recommended for special papers (Papers III and IV)*

## CELL BIOLOGY

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### Developmental Biology

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**Practical work based on Papers I & II.**

Total number of laboratory hours : 240

**1. Chordates : 120****a. Taxonomy**

Study of museum specimens of representative animals from all chordate groups (protochordates to mammals).

**b. Anatomy**

(i) General anatomy and neural gland of *Herdmania*.

(ii) Afferent and efferent arteries, cranial nerves, membranous labyrinth and Weberian ossicles of *Wallago*.

(iii) Study of fish anatomy through serial section of fry and fingerling stages.

(iv) Limb musculature, cranial nerves and eye muscles and their innervation in frog.

(v) General anatomy, major blood vessels and cranial nerves of any non-poisonous snake, study of differences between poisonous and non-poisonous snakes.

(vi) Flight muscles, perching mechanism, air sacs and anatomy of the neck region in the pigeon.

(vii) Reproductive system and anatomy of the neck region in rat or squirrel or any other mammal.

**c. Osteology**

Comparative study of the axial and appendicular skeleton from fish to mammals, with particular reference to the important skull-types in reptiles, birds and mammals, alizarine preparation of the skeleton of any vertebrate, dried and articulated preparation of the skeleton of any vertebrate.

**d. Permanent Preparations**

Spicules and pharyngeal wall of *Herdmania*, velum and pharyngeal wall of *Amphioxus*, whole mounts of pelagic tunicates, ampulla of Lorenzini in a skate or ray, placoid, cycloid and ctenoid scales, pecten and columella in pigeon, ear ossicles of rat or squirrel or any other mammal.

**e. Histology**

A detailed study of the histology of all mammalian tissues and organs through prepared slides to be made available.

**2. Developmental Biology :**

41

- a. Study of development of frog or toad through (i) formalin preserved or living material (egg, spawn, embryos, larvae and metamorphic stages) and (ii) permanent microscopic slides of sections through successive embryonic and larval stages.
- b. Study of development of chick through (i) permanent whole mounts of successive embryonic stages and (ii) permanent microscopic slides of sections through representative regions of successive embryonic stages.

*Note :* Special emphasis should be laid on organogenesis and morphogenesis.

- c. Removal of chick embryos of 16, 24, 33 and 72 hours from the egg and their study and identification in the living state, permanent whole mounts of these embryonic stages.
- d. Study of extra-embryonic membranes of chick embryo in a living state (9 day old embryo may be used for the purpose).
- e. Study of (i) formalin preserved fetuses with placenta and (ii) histological sections of the placenta of any mammal.

**3. Ecology :**

40

- (a) Measurement of climatic factors (atmospheric and water temperature, humidity in microhabitats, pH of water, velocity of current at different depths of water, Chlorides, dissolved oxygen and carbon dioxide in water, temporary and permanent hardness of water).
- (b) Measurement of edaphic factors : preparation of soil extract, determination of lime deficiency, pH, minerals, water content and organic matter.
- (c) Measurement of population density.

*Note :—*Numerical problems on population determination to be done.

- (d) A field study on any one of the following habitats to be assigned an individual or to a group of students :
  - (i) Sambhar lake.
  - (ii) Desert.
  - (iii) Fresh water lake.
  - (iv) River or any running water.

**4. Ethology :**

40

- (a) Study of the process of learning in rat with the help of animal Maze; analysis of the results of simple experiments.
- (b) Study of the shock and avoidance behaviour in rats, including extinction and relearning; analysis of the result of these experiments.
- (c) Study of the feeding behaviour of *Paramecium* or of any other protozoan.
- (d) Study of the reflex response in the housefly to various concentrations of sugar solution; determination of the 50% response needed to elicit the reflex response.
- (e) Study of the food preferences and feeding behaviour of an insect pest.
- (f) Study of the phototactic response in a housefly.

*Practical work based on Papers III & IV*

Total number of Laboratory hours : 240

**CELL BIOLOGY**

- 1. **Handling and operation of following apparatuses and equipment :**
  - (a) Phase, fluorescence and electron microscopes.
  - (b) Electrophoretic, chromatographic and electro-physiological equipments.
  - (c) Dry ice making kit.
  - (d) pH meter.
  - (e) Colorimeter.
- 2. **Microtomy :**  
Wax, fresh-frozen and fixed-frozen sections : sectioning of gelatin-embedded material.
- 3. Study of stained preparations of mitochondria and Golgi-bodies under the light microscope.
- 4. **Study of germ cells :**  
Smear preparation of spermatozoa from vas deferens (vital staining) and permanent preparation of a single ovum (vital staining).

5. Separation of nuclei and mitochondria by centrifugation/ultracentrifugation.
6. Biochemical estimations of the following in various tissues :
  - (a) Lipids : lecithin, cephalin and cholesterol.
  - (b) Carbohydrates : glycogen.
  - (c) Proteins : protein and non-protein nitrogen.
  - (d) Amino acids : chromatographic and electrophoretic separation.
7. Study of unfixed :  
Unstained and live animal tissues by phase contrast microscopy.
8. Histochemical demonstration :  
of phospholipids/lipids in kidney. Liver and nervous tissue by the following methods :
  - (a) Acid haematin method of Baker and its modifications.
  - (b) Controlled chromation method of Elftman (1958),
  - (c) Okamoto's method.
  - (d) Copper-phthalocyanin method of Pearse.
  - (e) Phosphomolybdc acid method (for choline containing lipids).
9. Histo cytochemical :  
Demonstration of protiens in various tissues by the following techniques
  - (a) Millon's reaction (for tyrosine containing proteins).
  - (b) Mercury-bromophenol blue method.
  - (c) Ninhydrin-Schiff method (for protein bound  $\text{NH}_2$ ).
10. Histo-cytochemical :  
Demonstration of nucleic acids by the following methods :
  - (a) Methyl-green pyronin Y method (for both RNA and DNA).
  - (b) Fuelgen staining.
11. Histo-cytochemical demonstration of carbohydrates in kidney, liver and nervous tissues by the following methods :
  - (a) Periodic acids-Schiff method (for glycogen).
  - (b) Sulphation metachromasia.
  - (c) Alcian blue method (for mucopolysaccharides)
  - (d) Silver method (for ascorbic acid).



12. **Histo-cytochemical standing of enzymes :**  
Standing of alkaline and acid phosphatases in kidney, liver and nervous tissues by Gomori's method and azo dye technique; histochemical characterization of lysosomes.
  13. Study of autofluorescence (lysosomal) and induced fluorescence (acridine orange) in animal tissues.
  14. Freeze-substitution and processing of the treated material.
  15. Demonstration of Bioelectric potentials : Oscillographic demonstration of nerve action potential.
- Note :—Exercises for items 7 & 8 to be framed according to available facilities.*

### Developmental Biology

1. Detailed study of early embryonic development of a fish, an amphibian, chick and a mammal through preserved materials: whole mounts and serial sections.
2. Study of morphogenesis and histogenesis of some selected organs such as limb, heart, eye, brain, etc. during embryonic and/or larval development of vertebrates through preserved materials, whole mounts and sections.
3. Study of morphological and histological developments during tail and limb regeneration in any amphibian.
4. Study of metamorphosis and its endocrine control in an insect and an amphibian.
5. Hypophysectomy in a living frog or toad.
6. Simple experiments on frog or toad embryos such as cultivation of parts of embryos in vitro, parabiosis transplantation, implantation, etc.
7. Microtomy of vertebrate embryos and larvae.
8. Alizarin preparation of a late chick embryo mammalian foetus/a frog or toad tadpole.
9. Study of oestrous cycle in a rodent.
10. Simple experiments on chick embryos such as cultivation of early embryos in vitro by ring technique, intrablastodermic and chorio allantoic grafting. demonstration of mor-

phogenetic movement and metabolic gradients, influence of teratogenic agent(s) on embryonic development, etc.

11. Identification and separation of free amino acids in embryonic and larval tissues and organs by paper chromatography.
12. Preparation of culture media such as embryo extract, plasma clot, etc.
13. Simple exercises on in vitro cultivation of embryonic tissues and organs by suitable techniques.

### Endocrinology

1. Dissection and gross examination of various endocrine glands of representative vertebrates.
2. Microscopical study of various endocrine glands of representative vertebrates through microtechnical procedure.
3. Study of the estrous cycle in mouse or rat by the vaginal smear technique.
4. Surgical procedures : castration, ovariectomy, adrenalectomy, thyroidectomy and hypophysectomy.
5. Bioassays for estrogens, androgens and anti-estrogens, the Ascheim-Zondek pregnancy test.
6. Biochemical estimations of cholesterol content in adrenal tissue and glycogen content in uterine tissue.
7. Sperm count.
8. Study of the sex chromatin.
9. Effect of epinephrine on chromatophores in fish.
10. Study of microscopic slides of endocrine and related structures.

### ENTOMOLOGY

1. Knowledge and use of equipment for the collection and preservation of insects : insect net, killing bottle, spreading board, insect box, device for inflating larva, light trap, etc.
2. Collection and preservation of insects and their different stages.

3. Collection of seasonal insects, nocturnal insects, aquatic insects, crop pests, stored grain pests and insects of medical and veterinary importance.
4. Identification of insects from various orders prescribed for study in the syllabus.
5. Permanent preparations : wings, mouth parts, antennae, legs and spiracles etc. of insects, sting of the honey bee. Note : Items 2 and 4 are to be continued in the fourth semester.
6. Identification of insects from various orders prescribed for study in the syllabus.
7. Collection and preservation of insects and their different stages.
8. Collection of seasonal insects, nocturnal insects, aquatic insects, crop pests, stored grain pests, insects of medical and veterinary importance.
9. Dissections of grasshopper, house cricket, baug, butterfly, housfly, honey bee, wasp beetle to study important features of the digestive, circulatory, respiratory, excretory, nervous reproductive and neuroendocrine systems.
10. Familiarity with techniques and appliances of applying insecticides, experiments for testing the insecticides.
11. Knowledge of rearing insects and of maintaining the insectary.
12. A tour to visit important centres of entomological studies.

#### FISH BIOLOGY

1. Complete anatomy of a teleost, represented by *Wallago* : external features, general viscera, including the urinogenital organs, jaw and lateral musculature, including the nerve supply, afferent and efferent branchial blood vessels, brain and cranial nerves; eye muscles and their innervation; membranous labyrinth-Weberian ossicles-swimbladder connection; dry and alizarin preparations of the skeleton and its study.
2. Dissection of the head of any flatfish (*Pleuronecti-formes*) with reference to its asymmetry.
3. Dissection of their-breathing organs in *Anabas*, *Clarias*, *Channa* and *Heteropneustes*, showing the blood supply wherever possible.

4. External features, afferent and efferent branchial blood vessels, cranial nerves and membranous labyrinth of Dasytis or any other skate or ray.
5. Permanent preparations and study of ampulla of Lorenzini, dermal and pharyngeal denticles, cycloid and ctenoid scales.
6. **Microtechnical Procedures :**  
Preparation and study of serial sections of a larval fish and of representative tissues and organs of fish.
7. Collection of local fishes and their identification upto the species level; study of the available museum specimens.
8. **Hydrobiological Studies :**
  - a. Analysis of water to determine the pH, free carbon dioxide; dissolved oxygen, chlorides, calcium total alkalinity and total salinity.
  - b. Collection, estimation and analysis of plankton.
9. **Biochemical and physiological studies :**
  - a. Estimation of glycogen in liver.
  - b. Determination of pool-size or free amino acids in muscle or blood plasma through chromatography.
  - c. Effect of epinephrine on the chromatophores.
  - d. Induced spawning.
  - e. Active transport in kidney tubule.
10. **Field studies :**
  - a. Periodical visits to a local fishing farm or fish centre to gain a first hand knowledge of its piscicultural practices and fisheries activities.
  - b. A week's tour of an inland fisheries research station or piscicultural centre. The suggested places for the tour are Udaipur, Rana Pratap Sagar Dam at Kota, Alwar, Bharatpur, Allahabad, Cuttack and Barrackpore.
  - c. A week's stay and work at an important marine biological or fisheries centre in the country. The suggested places for this work are Okha, Veraval, Central Institute of Fisheries Education at Bombay and National Institute of Oceanographic Research at Goa.

*Note :—*A record of the work done under item 7 has to be Compulsorily submitted by each candidate.

### Physiology

1. Oscillographic recording of electrical activity from the sciatic nerve of frog : compound action potentials, etc.
2. Study of the excitability of smooth muscle of rat intestine.
3. Study of the reflexes in spinal and decerebrate frog.
4. Oscillographic investigation of the anal cerci of cockroach.
5. Kymographic recording of muscle twitches, summation, fatigue and staircase phenomena; effect of experimental factors on these phenomena.
6. Kymographic recording of frog's heart beat; study of effects of drugs and other factors on the heart beat.
7. Microtomy and techniques of histological and histochemical staining.
8. Study of the excretory activity of malpighian tubules of insect; estimation of various nitrogenous excretory products in animals of different habits.
9. Bioassay of acetylcholine and 5HT in nervous tissue.
10. Study of the physiological properties of glycerinated muscle fibres (experimental model of muscle contraction and action-myosin fibres).
11. Study of the sodium ion transport through frog's skin.
12. Study of the transport of glucose across membranes of the small intestine.
13. Study of the physiological properties of mitochondria : isolation of mitochondria by centrifugation and study of their succinate dehydrogenase and cytochrome oxidase activity.
14. Qualitative study of digestive enzymes in the gut of cockroach.
15. Study of oxygen consumption as a function of body size, temperature, etc; estimation of metabolism of such substances as protein, fat and carbohydrate.

*Note* :—Depending on the facilities available, experiment may be added or substituted.

### Radiation Biology

1. Knowledge and use of Geiger-Muller counter, decade scaler, liquid and well types of scintillation, counters, survey meter, single channel gamma spectrometer actigraph system and cobalt camera.

2. Determination of operating voltage of the G-M tube.
3. Calculation of the inverse square law.
4. Determination of the resolving time of G-M tube.
5. Determination of the physical half-life of an isotope given singly and in a mixture of two isotopes.
6. Collection and preparation of various tissues for radioassay : mode of administration of the isotope; ashing procedures; counting of samples; quantitative interpretation of data.
7. Determination of the self-absorption factor.
8. Determination of the back scattering factor.
9. Paper radiochromatography : use of solvents; use of reagents; interpretation of the chromatogram; scanning procedures.
10. Autoradiography : liquid emulsion and stripping film methods.
11. Microtechnical procedures, histochemical, histopathological and biochemical studies of various tissues after internal and external irradiations.
12. Determination of thyroid iodine conversion ratio (CR) using  $^{131}\text{I}$  : the TCA method.

#### Toxicology

1. Identification and examination of the following :
  - (a) DDT residues in plants and plant materials.
  - (b) Parathion residue on leaves.
  - (c) BHC residues.
  - (d) DDT residue on surfaces other than plants.
2. Separation and tentative identification of insecticides in a given mixture by reverse phase paper chromatography.
3. Exercises on toxicological statistics.
4. Dissections of pests to study important system.
5. Collection and identification of major pests.
6. Assessment of toxicity :
  - (a) of residual films obtained as (i) dry and (ii) oil surface residues.
  - (b) on topical application of toxicants.
  - (c) on injecting a toxicant.
  - (d) on feeding a toxicant.

7. Study of the joint action of insecticides.
  8. Bioassay exercises using :
    - (a) Mosquito larva.
    - (b) Daphnia or any other crustacean.
    - (c) Stored product pests.
    - (d) A bird or a mammal.
  9. Microtechnical procedures; histological study of tissues from treated animals.
-

MINUTES OF THE SPECIAL MEETING OF THE BOARD  
OF STUDIES IN STATISTICS HELD ON 23RD AND 27TH  
JUNE, 1979 AT 10.00 A.M. IN THE UNIVERSITY  
OFFICE, JAIPUR

Present :

1. Prof. B.D. Tikkiwal (Convener)
2. Dr. V.P. Gupta
3. Dr. K.L. Sharma

(1) With reference to the Academic Council Res. No. 16, dated 15-5-79 and the Syndicate Res. No. 2(III), dated 26-27th May, 1979 the Board recommended the Courses of Study for the M.A./M.Sc. Statistics Previous Examinations of 1980 and 1981 and Final Examinations of 1981 and 1982 according to Annual Scheme of Examination (*Vide Appendix-I*).

(2) With reference to Academic Council Res. No. 10, dated 1st June, 1979 and Syndicate Res. No. 3, dated 16th June, 1979 the Board *resolved to recommend* that the Word 'Unit' be deleted in all the syllabi of the Under-graduate and Post-Graduate examinations in the subject and accordingly 1979 editions of the Syllabi prescribed for the various examinations of 1981 in the subject be got printed.

The meeting ended with a vote of thanks to the chair.

B.D. Tikkiwal  
Convener



## SCHEME OF EXAMINATION

## M.A./M.Sc. EXAMINATION

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-Voce (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field Work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical(s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	of the aggregate marks taken together of the Previous and the Final Examinations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper(s)/Practical(s)/Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36% in the case of Practical) shall be taken into account in respect of such Paper(s)/Practical(s)/ Dissertation/Viva Voce as are cleared after the expiry of the aforesaid period of three years: provided that, in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many mark out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidate shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students (Correspondence course students included) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examination:

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate candidates, the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

**M.A./M.Sc. ANNUAL EXAMINATION****( Previous—1980 )**

Paper I ; Statistical Mathematics	100 marks	3 hours
Paper II : Discrete Probability Distribution	”	”
Paper III : Sampling distributions, Bivariate distributions and Statistical Inference.	”	”
Paper IV : Design of Experiments and Sample surveys.	”	”
Paper V ; Practicals based on Papers I to IV and computer programming	”	”
Part I	100 marks	4 hours
Part II	100 marks	4 hours

**M.A./M.Sc. ANNUAL EXAMINATION****(Final—1981)***Compulsory Papers*

Paper VI : Multivariate Analysis and Advanced Statistical Inference	100 marks	3 hours
Paper VII Advanced Design of experiments and Advanced Theory of Sample Surveys.	100 marks	3 hours
Paper VIII Practicals based on Paper VI & VII;		
(a) Written Examination		
Part-I: Multivariate Analysis	20 marks	} 4 hours
Part-II: Advanced design of experiments—	25 marks	
Part-III Advanced Theory of Sample Surveys—	25 marks	
(b) Sessional work (Practical record & Viva-voce)—	30 marks	

**Paper IX—Comprehensive Examination :**

Part-A Objective test based on all Compulsory Theory papers in M.A./M.Sc. Statistics as a whole	50 marks
	—Time: 1½ hours
Part-B: Viva-Voce	50 marks

**Optional papers:**

Any two of the following papers with the permission of the Institution concerned.

**Paper X.—Measure and Integration and Advanced Probability**

100 marks 3 hours

Part-A: Measure and Integration

Part-B: Advanced Probability.

**Paper XI—Non-parametric Inference and Sequential**

**Analysis:**

100 marks 3 hours

*Section-A:* Non-parametric Inference

*Section-B:* Sequential Analysis

**Paper XII.— Statistical Quality Control and Operational research**

100 marks 3 hours

*Section-A:* Statistical Quality Control

*Section-B:* Operational Research.

**Paper XIII —Mathematical Economics and Econometrics.**

100 marks 3 hours

*Section-A:* Mathematical Economics

*Section-B:* Econometrics.

**Paper XIV.—Discrete Stochastic Processes and Demography:**

100 marks 3 hours

*Section-A:* Discrete Stochastic Processes

*Section-B:* Demography.

**Paper XV —Some Selected Topics in Advanced Statistics**

100 marks 3 hours

*Note* :—(1) A candidate will be required to offer any two of the following three topics :

( i ) Sample Surveys

( ii ) Design of Experiments

(iii) Statistical Inference.

(2) The above three topics shall normally be examined by separate examiners.

**Paper XVI.—Project work/Dissertation & Viva-Voce.:**

100 marks

*Note* :—(1) The dissertation shall contain review material giving a review of some recent papers in an area of study.

- (2) The project work shall be based on either primary data involving field work or secondary data. The candidates will be required to prepare critical reports on the same.
- (3) The teacher supervising the project work/Dissertation of a candidate shall be provided one hour per week towards his/her supervision.
- (4) In all theory papers of M.A./M.Sc. Previous and Final Statistics except Paper XV the candidates will be required to answer five questions in all taking at least two questions from each section. In Paper XV, the candidates will be required to answer from each of the two sections selected, two questions each carrying 20 marks and one short question of 10 marks.

## SYLLABUS

## M.A./M.Sc. Previous Examinations

## Paper I—Statistical Mathematics :

3 hrs. duration

100 marks

## Section-‘A’

Linear Algebra : Inverse of a matrix, Rank of a matrix, Linear Equations. Orthogonal matrix, partitioned matrices, Orthogonal reduction of a real symmetric matrix to a diagonal form.

Bilinear and quadratic forms, reduction to canonical forms, definite and indefinite forms.

Characteristic equation, its roots and vectors. Cayley-Hamilton theorem, Numerical Integration; Simpson’s rule, Weddle’s rule. Euler, Maclaurin’s expansion.

Numerical Analysis : Interpolation with equal intervals ; Newton’s formula and its applications. Newton’s divided difference formula and Lagrange’s formula. Error term in various interpolation formulae and their discussion.

## Section-‘B’

Uniform continuity and differentiability of a function of a real variable, uniform convergence of series.

Taylor’s theorem for variables, Lagrange’s method of undetermined multipliers.

Riemann Integration—Improper integrals and tests of convergence. Beta and Gamma integrals. Multiple integrals including Dirichlet’s integral.

Complex Analysis : Analytical function, Cauchy’s fundamental theorem (elementary proof). Singularities, Poles, Residues, Contour Integration. Taylor’s and Laurant’s theorem.

*Books recommended :*

1. Shanti Narayan: A Text Book of Matrices.
2. Saxena, H.C. and K.L. Sharma: Theory of Matrices.
3. Freeman: Finite Difference for Acturial Students.
4. Saxena H.C.: Calculus of Finite Difference.
5. Shanti Narayan: A course of mathematical analysis.
6. Philips E.G.: Functions of a complex variable with applications

*Books for reference :*

1. Milne and Thompson: Calculus of Finite Differences.
2. Ferrar, W.L.: Algebra.
3. Churchill: Complex variables and applications.
4. Rudin, W.: Principles of Mathematical analysis.
5. Copson: Introduction to the theory of functions of a complex variable.
6. Goldberg R.R.: Methods of real analysis.

**Paper II—Discrete Probability Distributions.**

3 hours duration—

100 marks

**Section-‘A’**

Role of experimentation in science. Axiomatic, approach to probability, sample space, Combination of two or more events.

Independence of experiments, conditional probability and statistical independence of events. Baye's theorem and its applications.

Random variables, Distribution function and frequency functions. Mathematical expectations, Moments, conditional expectation.

Chebyshev's inequality and its generalisation. Weak and strong law of large numbers. Various definitions of probability and their interconnections. Generating functions and their applications (From Feller Vol. I. Chapter XI. Sections I & 2).

**Section-‘B’**

Binomial. Negative binomial, Poisson, Normal Hypergeometric and Multinomial distributions.

Rectangular, Cauchy, Laplace, Gamma and Beta distributions Pearsonian system of curves.

Central limit theorems of equal and unequal components.

Measures of location and dispersion. Moments and cumulants. Sheppard corrections. Moment generating and characteristic functions. Inversion theorem.

*Books recommended :*

1. Tikkiwal, B.D.: Lecture Notes on Probability,
2. Feller. W.: An Introduction to Probability theory and its applications, Vol. I.

3. Goon and others: Out-line of statistical Theory, Vol. I.
4. Kendall, M.G. and Stuart, A. : Advanced Theory of Statistics, Vol. I.
5. Kolomogorove, A.N.: Foundations of theory of probability.
6. Parzen: Modern prob. theory and its applications.
7. Gnedenko : Theory of probability.

*Reference Books:*

1. Cramer, H. : Mathematical Methods of Statistics
2. Kapoor and Saxena : Mathematical Statistics.
3. Elderton and Johnson : Frequency Curves.

**Paper III—Sampling Distributions, Bivariate Distribution and Statistical Inference :**

3 hrs. duration—

100 marks

**Section—‘A’**

Univariate sampling Distributions : Random sampling. Chi-square, t and F sampling distributions (central and non-central) and their applications.

Standard errors of functions of moments. Order statistics and their distributions from any continuous population. Sampling distributions of median and range from any univariate population.

Bivariate distributions (discrete and continuous); Distribution functions, their properties, marginal and conditional distributions.

Scatter diagram, linear regression and correlation, Null and Non-null distributions of sample correlation coefficient.

**Section—‘B’**

Elements of Statistical Decision Function : Formulation of the problem, Loss function, Risk Function. Admissibility. Elements of Theory of Estimation : Point estimation. Criterion of good estimators for one parameter : consistency, efficiency, sufficiency, minimum mean square estimation, unbiasedness and UMVU estimation. Cramer-Rao bounds for one parameter only.

Method of maximum likelihood estimation. Asymptotic, properties of maximum likelihood estimators, Interval estimation confidence interval and confidence coefficient. General method for obtaining confidence intervals.

Elements of Testing of Hypotheses : Two kinds of errors in testing, simple v/s simple, Randomised and non-randomised tests,



Critical region, Neyman-Pearson lemma and determination of BCR in Neyman sense for simple v/s simple only. Generalised Likelihood Ratio Test.

Elements of non-parametric tests : Sign, median, and run tests. Elements of sequential analysis : Construction of sequential tests SPRT Test and its applications.

*Books recommended :*

1. Goon and others : Out-line of Statistical Theory Vol. I.
2. Kendall, M.G. and Stuart, A. : Advanced Theory of Statistics, Vol. I and II.
3. Mood and Graybill : Introduction to the theory of Statistics.

*Reference books :*

1. Cramer, H. : Mathematical methods of Statistics.
2. Weatherburn, C.E. : First course in Mathematical Statistics :
3. Sidney Siegal : Non-parametric Statistics for the Behavioral sciences.
4. L. Weiss : Statistical Decision Theory.
5. Wald, A. : Sequential Analysis.

**Paper IV—Design of Experiments and Sample Surveys:**

3 hrs. duration—

100 marks

**Section-‘A’**

Analysis of experimental model by least squares : Markoff theorem and testing of hypothesis, Cochran's theorem. Orthogonal polynomials.

Analysis of variance and covariance. Transformations.

Principles of experimentation, uniformity trials, randomised experiments, randomised blocks, latin squares, balanced incomplete block designs.

Factorial experiments, 2<sup>n</sup> and split-plot designs, Total and Partial confounding. Missing Plot Technique.

*Note* :—The construction of designs is not included in the course.

## Section-'B'

## Sample Surveys :

Planning, Execution and Analysis of a particular large scale survey. Problems, in general, in *organising* such large scale surveys.

Tikkiwal's variance—covariance lemmas (with proof) for one stage and two-stage sampling Patterson's lemma for one-stage sampling and Tikkiwal's lemma for two-stage sampling (without proof) for establishing optimality of estimators in equal probability sampling, Simple Random and Stratified sampling Schemes.

Cluster, two-stage (equal and unequal first stage with unbiased estimators) and systematic sampling.

Biased ratio and regression method of estimation, elements of uni-stage sampling with varying probabilities and with replacement.

*Books recommended for Sec. A :*

1. Anderson, R.L., and Bandcroft, T.A. : Statistical Theory in Research.
2. Kempthorne, O. : Design and analysis of experiments.
3. Cochran, W.G. and Cox, G.M. : Experimental Design.

*Books and articles recommended for Sec. B :*

1. Sukhatme, P.V. and Sukhatme, B.V. : Sampling Theory of Surveys with application.
2. Cochran, W.G. : Sampling Techniques.
3. Tikkiwal, B.D. : Regression Methods of Estimation, University of Rajasthan Studies, 1965.
4. Tikkiwal, B.D. : A note on Two-stage sampling on the successive occasion, Sankhya, series A, 1964.
5. ....The Theory of Two-Stage sampling on the successive occasions. J.I.S.A., 1965.

*Reference Books :*

1. Hansen, Hurwitz and Madow : Sampling survey Methods and Theory.
2. Deming, W.E. : Some theory of sampling.
3. Murthy, M.N. : Sampling theory and Methods.
4. Des Raj : Sampling theory.

## Paper V—Practicals Based on Paper I to IV.

200 marks

## Part I—Statistical Methodology.

(based on papers I, II, III and  
Computer Programming)

4 hrs. duration—

100 marks

## Part II—Design of experiments and Sample Surveys,

(based on paper IV).

4 hrs. duration—

100 marks

*N.B.* 1. Course on Computer Programming:—

Elements of Fortran IV and use of Computer Programming  
in solving relevant Statistical problems.

2. A tour programme for practical demonstration will be  
arranged at a suitable place till an electronic computer is not  
locally available.

3. Visits to local Govt. and Non-Govt. Statistical Organisa-  
tions and Research Stations may be organised to familiarise students  
with the practical work done at these places.

*Books for reference :*

1. Goulden, C.H. : Methods of Statistical Analysis.
2. Snedecor, G.W. and Cochran, W.G.: Statistical  
methods.
3. Laha and others: Hand Book of Methods of Applied  
Statistics.

M.A./M.Sc. FINAL EXAMINATION, 1981

*Compulsory Papers*

Paper VI—Multivariate Analysis and Advanced Statistical Inference

3 hrs. duration—

100 marks

Section (a)—Multivariate Analysis :

Multivariate normal distribution and its properties. Density function, marginal, and conditional distributions, Distributions of Quadratic forms.

Maximum Likelihood estimators of the mean vectors and covariance matrix, and related distributions. Null and Non-null distributions of partial and the multiple correlations coefficients. Multivariate central limit theorem and asymptotic distribution of  $Z = \tanh r$ .

Hotellings  $T^2$  and its properties and uses, Mahalanobis- $D^2$ . Wishart Distribution and its properties.

Classification of observations.

Section (B)—Advanced Statistical Inference:-

Properties of Maximum Likelihood Estimators (with derivation). Generalization of Cramer-Rao Inequality for multiparametric case.

Complete family of probability distributions. Complete statistics and minimal sufficiency—Lehmann-Scheffe theorem on minimum variance estimation.

Uniformly most powerful tests with one and more than one parameter. Unbiasedness, consistency and efficiency of tests. Similar regions.

Type A,  $A_1$ , B, C and D critical regions.

Relationship between notions of completeness and similarity.

Likelihood-ratio test and some of its applications. Asymptotic distribution of the L.R. Statistics.

*Books recommended for Sec., (A) :*

1. Anderson, T.W.: An Introduction to Multivariate Statistical Analysis (first seven chapters).

*Reference book for Sec., (A) :*

1. Rao. C.R.: Linear Statistical Inference.

*Books recommended for Sec., (B) :*

C.R. Rao : Linear Statistical Inference...

Kendall &amp; Stuart: Advanced Theory of Statistics, Vol. II.

**Paper VII—Advanced Design of Experiments and Advanced Theory of Sample Surveys.**

3 hrs.

100 marks

**Section-‘A’****Advanced Design of Experiments—**

Linear estimation, Gauss Markoff theorem. Testing of hypothesis (Involving several linear functions, test of sub-hypothesis—Involving several linear functions, test of sub-hypothesis—and test involving equality of some of the parameters).

General theory of analysis of experimental designs, Designs for two-way elimination of heterogeneity. Desirable properties of a good design--orthogonality connectedness and balance. Relation between the blocks of incomplete block design-resolvability and affine resolvability--Theorems on bounds.

Group divisible, lattice and linked block design, Intrablock analysis, Latin square and youden square design.

Elementary ideas of response surface and rotatable designs.

Combination of results of groups of experiments, long term and rotational experiments, Switch over trials, sampling in fields experiments and experiments on cultivators fields, Economics of experimentation, optimum amount of experimentation, study of the experiments with dummy treatments.

*Books recommended :*

1. M.C. Chakrabarti : Mathematics of design and analysis of Experiments.
2. D. Raghavarao : Construction & combinatorial problems in Design of experiments
3. Cochran & Cox : Experimental designs.

**Section-‘B’****Advanced Theory of Sample Surveys—**

Quenouille's Technique of Bias Reduction and its application to Ratio-type estimators. Hartley and Ross Unbiased Ratio-type estimator. Ratio-method of estimation under Midzuno Scheme of sampling when  $\bar{X}$  is known. Bivariate Extension of the Ratio-

Method of Estimation when population means of auxiliary variables are known.

Tikkiwal's Partition of Sample Space, Definition of T—classes of linear estimators. The Wideness of set of above seven classes of linear estimators. A unified approach to  $T_2$ —class of linear estimators. The three unbiased estimators of variance of Horvitz-Thompson's estimator. Rao-Hartley-Cochran Sampling scheme and their estimation procedure. The theory of multi-stage sampling with varying probabilities with or without replacement.

Non-sampling Errors.

*Books recommended :*

1. Sukhatme, P.V. and Suhhatme, B.V. : Sampling Theory of Surveys with applications.
2. Tikkiwal, B.D. : Lecture notes on Advanced Theory of Sample Surveys.

*Reference Books :*

1. Murthy, M.N. : Sampling Theory and Methods.
2. Cochran. W.G.: Sampling Techniques.
3. Des Raj : Sampling theory.

Paper VIII—Practicals Based on Paper VI and VII :

(a) Written Examination	4 hour's
Part (i)—Multivariate Analysis.	20 marks
Part (ii)—Advanced Design of Experiments	25 marks
Part (iii)—Advanced Theory of Sample Surveys	25 marks
(b) Sessional work— (Practical Record and Viva-Voce).	30 marks

Paper IX—Comprehensive Examination:

Part (A)— Objective test based on all Compulsory theory papers in M.A./M.Sc. Statistics as a whole—	1½ hours 50 marks
Part (B)—Viva-Voce	50 marks

**Optional Papers :**

Any two of the following papers with the permission of the Institution concerned. In lieu of these papers, one can offer papers in other subjects in the Faculty of Social Sciences/Science.

Paper X—Measure and Integration, and  
Advanced Probability.

3 hour's  
100 marks

Section-'A'

Measure and Integration:

The scope of the course is indicated by the following articles of Kingman and Taylor.

Article No.

- |                     |   |
|---------------------|---|
| 1.1 & 1.2,          | Algebra of sets : limit of a sequence of sets;  |
| 1.4 & 1.5           | classes of sets, ring, $\sigma$ -ring, field, $\sigma$ -field and monotone class.<br>Additive set functions, measure and the outer measure.   |
| 3.3                 | Additive set functions on a ring.   |
| 4.1, 4.2<br>and 4.5 | Extension of a measure, extension theorem.—Definition (only) of complete measures, Lebesgue & Lebesgue Stieltjes measure (one dimension only) Probability measure, distribution function and its correspondence with Lebesgue stieltie's measure. |
| 5.1, 5.2            | Measurable sets and space, measure space  |
| 5.3                 | Simple, Elementary and measurable functions.  |
| 5.4                 | Sequences of measurable functions.  |
| and 5.5.            | Integrability of measurable functions. Properties of Integral Lebesgue monotone convergence and dominant convergence theorems ; Fatou's Lamma, Lebesgue and Lebesgue Stieltjes integrals (one dimensional only).                                  |
| 6.1, 6.2,           | Product spaces and product measures, Fubini's Theorem, Radon Nikodyn  |
| 6.3, 6.4,           | Theorem;  |
| and 7.1             | Space of measurable function, convergence of sequence of functions. convergence in measure, i.e. convergence and uniform convergence.   |

*Books recommended :*

1. Kingman and Taylor : Introduction to Measure and Probability.
2. Loeve : Probability Theory.

*Books for reference :*

1. P.R. Halmos : Measure Theory.

**Section-'B'****Advanced Probability.**

Probability measures, Random variables (real or complex), Theorems on convergence of distribution functions, Inversion Theorem on characteristic functions.

Borel-Cantelli Lemma, Kolmogorov's Zero-or-one law, Expectation, conditional Expectation and Theorems on the same.

Strong Limit Theorem for Independent Random variables : Kolmogorov's Inequalities, the weak and strong Law of Large numbers and Theorems on the same.

Central Limit Theorems due to Khinchine, Lindberg and others.

*Note* :—The stress in the paper should be more on application rather than mathematical rigour.

*Books recommended :*

1. Kingman, J.F. and : Introduction to Measure and  
Taylor, S.J. Probability.
2. Tucker, H.G. : A Graduate Course in Probability

Paper XI—Non-parametric Inference and Sequential Analysis.

3 hours—

100 marks

**Section-'A'****Advanced Nonparametric Inference:**

Order Statistics and their sampling distributions. Confidence interval estimates and hypothesis testing for population quantiles. Tolerance limits for distributions and coverages. Ranks : Correlation between ranks and variate values. Treatment of ties in ranks.

Tests for one-sample problems; Run test for randomness, tests based on the total number of runs and the length of the longest run, Kolmogorov Smirnov and chi square goodness of fit tests. Ordinary sign test and Wilcoxon signed rank test.



Test for two sample problems, comparison of two distribution by Wald-wolfowitz Runs test and Kolomogrov Smirnov test. Median test for equality of locations and Mann-whitney U-test.

Linear ranks statistics, its definition, probability distribution and usefulness in inference problems.

Linear rank test for the location and Scale problems.

*Books Recommended :*

Gibbons : Non-parametric Statistical Inference.

Lehmann : Non-parametrics : Statistical Methods Based on Ranks.

**Section-'B'**

**Sequential Analysis.**

A rigorous treatment to SPRT and its properties regarding its termination and efficiency etc. Barnard, Darling and Robbins treatment to sequential tests with power one.

Sequential tests of simple and composite Hypotheses against a set of alternatives and its application to discrete and continuous populations such as Binomial and Normal ones.

Sequential Estimation : Stein's two sample procedure, Wolfowitz treatment to the efficiency of Sequential estimators, Sequential t-test.

*Books and articles recommended :*

1. Wald A : Sequential Analysis (Chapters : 4, 6, 7, 8, 9, 11 with appendices 1, 2, 3, 4, 6, 7).
2. Rao, C.R. : Linear Statistical Inference and its applications (Sec. 7C).
3. Stein, O.C. AMS Vol. 16, 1945.
4. Wolfowitz, J. AMS Vol. 18, 1947.
5. Anscombe, F.J. J. Roy Stat. Soc. Series B, 1953.

**Paper XII—Statistical Quality Control and Operational Research:**

3 hours—

100 marks

**Section-'A'**

**Statistical Quality Control:**

Statistical Quality Control : Meaning of specification limits, item quality, Process and Process control. Objectives of S.Q.C.

control Charts for measurable quality characteristic :—Chance Variation and assignable variation of a process. Distribution of chance variates. Need for detection of assignable causes of variation.  $\bar{X}$  and R charts, Determination of control limits and central line in various situations.

Meaning of Statistical control and its relation with specification limits. Modified control limits, warning limits and tolerance limits. Methods of estimation inherent variability Rational sub-grouping successive estimate control charts for defectives, 'P' and 'np' control charts for number of defects per unit, 'C' chart.

Advantages of S.Q.C. comparison of  $\bar{X}$  and R chart with p chart when both can be used for same situation.

Acceptance Sampling by attributes. Need for sampling inspection methods for acceptance. Lot quality and lot by lot acceptance. A.Q.L. A.O.Q.L., producer's risk, consumer risk rectification O.C. function, A.S.N. and Average total inspection of a acceptance procedure Single and double sampling plans and their mathematical analysis.

Knowledge of Standard Sampling inspection tables. Dodge and Roming table and Mil Std 105A. Sampling inspection plans for continuous production process where lots can not be formed.

Sampling inspection plans by variables :—One sided specification standard (known and unknown). Two sided specification (standard known).

#### *Books Recommended :*

1. E.L. Grant, Statistical Quality Control.
2. Bowker and Goode, Sampling Inspection by variables.
3. I.W. Burr, Engineering Statistics and Quality Control.

#### **Section-'B'**

##### **Operational Research :**

Queuing Theory—Examples of queuing processes. Models of queuing processes : M/M/I and M/M/S with poisson arrivals, exponential service time distribution length of queue and the queue-discipline being F.I.F.O.

##### *Books :*

A.M. Lee "Applied Queuing Theory (Macmillan) 1966 Chapters 1, 2, 3.

##### **Linear Programming :**

*Books :*

1. Gass S.I. "Linear programming" Third paper back edition Chapter 2; pages 21 to 37.  
Chapter 3; pages 49 to 62  
Chapter 4; pages 64 to 82.
2. Hadley "Linear Programming" 7th printing, 1973 paper back edition.

Chapter 1 : page 1 to 21.

Operational, Research—Definition, scope and general nature of O.R. Different types of models—their construction and general method of solutions, particularly Monte Carlo technique of Simulation.

*Books :*

- (i) Sasieni M, Yaspan A, & Friedman. L.,  
"Operations Research"  
Chapter I : pages 3 to 19  
Chapter 7 : pages 157 to 190.

*Inventory Control*

Elementary Inventory deterministic models with at most two linear restrictions and without restriction Probabilistic demand models (without production lead time).

*Books :*

- (i) Churchman, Ackoff and Arnoff "Introduction to Operations Research".  
Chapter 8; pages 202 to 232
- (ii) Sasieni, Yaspan & Friedman "Operations Research".  
Chapter 4; pages 70 to 85.
- (iii) Ackoff & Sasieni "Fundamentals of Operations Research".  
Chapter 7; pages 181 to 185.
- (iv) Hadley & Whitin "Analysis of Inventory systems"  
Chapter 2; pages 54 to 60.

*N.B.*—The Books and their Chapters along with the pages are given above to indicate the scope of the course.

*Paper XIII—Mathematical Economics and Econometrics*

3 hour's—

100 marks

## Section-'A'

**Mathematical Economics :**

Use of mathematics and Statistics in Economic Theory of consumer behaviour; Indifference maps; Equilibrium of exchange; Family budget enquiries, Engels curve; The derivation of Slutsky's equation for 2 commodity; Elasticity relations in demand theory.

Nature of cost, Equilibrium of the firm : Pricing under conditions of perfect competition and monopoly, Walrasian general equilibrium of exchange, Leontief's static input-output analysis.

Endogenous and Exogenous variables, Instrumental and target variables : concept of multiplier, liquidity preference, marginal efficiency of capital static Keynesian equilibrium, analysis Interaction between the multiplier analysis and the principal of acceleration.

Concept of structure and model: Theoretical models and decision models. Growth models of Harrod and Domar; Mahalanobis model: The Pareto distribution; The Longnormal distribution; Lorenz curve.

*Books :*

- |                   |                                     |
|-------------------|-------------------------------------|
| 1. Klein L.R.,    | : 'An Introduction to Econometrics' |
| 2. Allen, R.G.D.  | : 'Mathematical Economics'          |
| 3. Chennery, H.B. | : 'Inter Industry Economics'        |
| 4. Hicks          | : 'Value & Capital'                 |
| 5. Wold, H.       | : 'Demand Analysis'                 |
| 6. Baumal, W.J.   | : 'Economic Dynamics'               |

## Section-'B'

**Econometrics :**

Meaning and scope of Econometrics; The classical least squares model its assumptions and the properties of its estimators; Generalised least squares method.

Errors in variables: The treatment of anticorrelated disturbances in ordinary and distributed lag models; The problem of multicollinearity; Identification problem in simultaneous equation models.

Simultaneous equation methods : Two stage least square estimators; Limited-information estimators, k-class estimators, three-stage least squares and full information maximum-likelihood method.

Monte carlo studies; Empirical applications of Production function, consumption function, Engels curve.

**Books :**

1. Johnston, J. : 'Econometric Methods' Ind. Edition.
2. Goldberger, A.S. : 'Econometric Theory'
3. Christ : 'Econometric models'
4. Klein : 'Text book of Econometric'
5. Rao, P. and Miller R.L. : 'Applied Econometric'.

**Paper XIV— Discrete Stochastic Processes and Demography:**

3 hours—

100 marks

**Section-'A'****Discrete Stochastic Processes.**

*Integral valued variables :* Generating functions : Convolutions, applications to first passage and recurrence times in Bernoulli trials, Bivariate generating functions.

*Compound distributions and Branching processes.* Sums of a random number of variables, compound poisson distribution, Infinitely divisible distributions. Extinction probabilities in Branching processes.

**Recurrent Events and Renewal Theory:** Delayed recurrent events, Application to the theory of Success.

**Random Walk and Ruin Problems:** Classical Ruin problem, Expected duration of the game, Diffusion processes.

**Markov chains:** Algebraic treatment of finite Markov chains and simplest. Time-Dependent Stochastic processes. Markov Processes, The Birth-Death processes.

*Book*—Introduction to Probability Theory and its applications Vol. I by William Feller chapters XI to XVII.

**Section 'B'****Demography -**

Census and Vital Statistics data, Vital rates and ratios, standardisation of rates, trends and differentials in mortality and fertility.

Stationary population, construction of life tables, gross and net reproduction rates : stable population theory, population estimation and projection.

Demographic trends in India, labour force analysis, birth and death stochastic processes.

Stochastic population models, logistic model, bivariate growth models, migration models, fertility analysis models, mortality analysis models.

*Books recommended :*

Cox: Demography

Barclay: Techniques of population analysis.

Kamitkar and Bhende: Principles of populations studies.

**Paper XV—Some Selected Topics in Advanced Statistics:**

3 hour's—

100 marks

*Note* :—A candidate will be required to offer any two of the following three sections.

Section A : Design of Experiments

Section B : Sample Surveys

Section C : Statistical Inference.

**Section 'A' : Design of Experiments**

Partially balanced incomplete block designs-properties. Analysis with recovery of inter block, analysis of incomplete block designs—Analysis of Graecolation squares :

Orthogonal arrays, properties, Pairwise balanced designs and construction of mutually orthogonal, latin squares-falsity of Euler's conjecture.

Construction of confounded factorial experiments, balancing in factorial experiments, fractional replications.

Weighing designs (chemical balance and spring balance rotatable designs) simple methods of construction of 13 I groups—divisible designs kronecter product designs. System of distinct representatives and construction of Youden squares.

*Books :*

1. M.C. Chakrabarti Mathematics of Design of Experiments
2. D. Raghavarao Constructions and Combinatorial problem in design of Experiments.
3. Kempthorne Design & Analysis of Experiments.

**Section 'B' Sample Surveys**

Generalised Tikkiwal Techniques of Unordering and Combined Unordering. The Unordering of the most general T—class of linear estimators.

The combined—unordering of the classical SRSWR estimator. Some important results in  $T_1$ ,  $T_2$  and  $T_7$ —classes of linear estimators. Unified Theory of Godambe: His general classes a special class of  $T_7$ —class and some other important results. Non-linear estimation.

Theory of univariate successive sampling on  $h$  occasions and its applications.

Stratification problems. Sufficiency in sampling theory and its application to improve classical SRSWR estimator. Sukhatme, Tukey and Robson's main results on Symmetric Functions and Polykays.

#### *Books and Articles Recommended :*

1. Tikkiwal, B.D. : Lecture Notes on Advanced Theory of Sample Surveys.
2. Sukhatme, P.V. : Sampling Theory of Surveys and  
& Sukhatme, B.V. with application.
3. Pathak : Lecture Notes.
4. Articles from : American Stat. Assoc. 1972 and  
Journals 1973.

#### *Section C : Statistical Inference*

Any one of the following two parts :

- (A) Admissibility of estimators : Basic theory of admissibility and complete class. Inadmissibility of some commonly used estimators.

Unified theory of Linear Estimation, Estimation of the variance components : Variance components model, MINQUE Theory.

- (B) Advanced theory of Estimation : Criteria of Good Estimation and Rao-Blackwell Theorem as its corollary. Various theorems Involving sufficiency and completeness and their applications.

Certain Preliminaries to Randomised and non-randomised Test Procedures. Test Procedure for Testing a Composite Hypothesis against a Simple Alternative. Statements of Results (without proof) concerning other Types of Hypothesis.

Nature of Bayesian inference, Bayes estimators for quadratic and convex loss functions, Generalised Bayes estimators, Asymptotic behaviour of Bayes estimators.

Minimax Estimation. Estimation procedure in case of partial prior information.

*Books recommended :*

- Zacks : The Theory of Statistical Inference (Wiley)  
Articles. 6.1 to 6.4 and 8.1 to 8.5
- Rao, C.R. : Linear Statistical Inference and its applications (2nd Ed.) Chapter 4, p.p. 294 to 305
- Tikkiwal, B.D. : Mimeograph Notes on Measure, Probability and Advanced Statistical Inference

For Part B the material is to be collected from different Journals.

*Books for reference :*

- (i) Lehmann : Testing Statistical Hypothesis.  
(ii) Lehmann : Notes on the Theory of Estimation  
(iii) Ferguson : Mathematical Statistics.

Paper XVI—Project work/Dissertation & Viva-Voce :

100 marks

- Note :—*(i) The dissertation shall contain review material giving a review of some recent papers in an area of study.
- (ii) The project work shall be based on either primary data involving field work or secondary data. The candidates will be required to prepare critical reports on the same.



MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN PSYCHOLOGY HELD ON 26/27/28 JUNE, 1979 AT  
10.00 A.M. IN THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Prof. S.N. Sinha (Convener)
2. Dr. (Mrs.) Saroj Gupta.
3. Shri K.N. Sharma.
4. Shri S.C. Prasad. (Special Invitee).
5. Dr. S.S. Nathawat (Special Invitee).
6. Dr. U.C. Jain.

(No. 5 and 6 were present on 27/28th June, 1979 only).

1. With reference to Academic Council Res. No. 16 dated 15.5.1979 and the Syndicate vide its resolution No. 2 (iii) dated 26/27th May, 1979, the Board *Resolved to recommend* that the courses of study prescribed for the first and the second Semester Examinations may be combined together as M.A. (Prev.). Similarly, the courses of study prescribed for the IIIrd and IVth Semester examinations may be combined together as M.A. Final. Accordingly, the syllabi and scheme of the examination for the M.A. (Prev.) Examination of 1980 and 1981; Final Examination of 1981 and 1982 according to Annual Scheme of Examination be the same as given in *Appendix-*

2. With reference to the Academic Council Res. No. 10, dated 1st June, 1979 and the Syndicate Res. No. 3, dated 16th June, 1979, the Board *re-arranged the courses of study* which are already prescribed and approved by the competent University Bodies for the under-graduate and degree examinations of 1981 in the subject and desired that 1979 edition of the syllabuses prescribed for the various examinations of 1981 in the Subject be got printed.

3. The Board *also reviewed the Hindi translation of the syllabuses* for the under graduate examinations only, and desired that the same be got printed in 1979 Ed. of the Syllabus.

4. *The members of Board of Studies Unanimously resolved to recommend that* in view of the fact that the courses for optional group "B" included in 1978 Edition 'to be taught in M.A. IIIrd and IVth Semester for December, 1979, and May, 1980 examinations may include the same courses as for 1979-80 edition M.A. final. However, the teaching and examination may be done by deviding the courses prescribed for the annual annual scheme into two equivalent halves. (As per Appendix-II)

The meeting ended with a vote of thanks to the Chair.

(Convener)

## APPENDIX I

## SCHEME OF EXAMINATION

M.A. Psychology EXAMINATION  
( *Annual Scheme* )

Each theory paper	3 hours	100 marks
Viva-Voice (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field Work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical (s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	} of the aggregate marks taken together of the Pre- vious and the Final Exami- nations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper (s) /Practical (s)/ Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks

only viz 25% (36% in the case of Practical) shall be taken into account in respect of such Paper (s)/Practical (s)/Dissertation/Viva Voce as are cleared after the expiry of the aforesaid period of three years ; provided that; in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many mark out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Feld Work shall be type-written and submitted in triplicate so as to reach the Office of the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students (Correspondence course studens included) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examinations.

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate Candidates shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

## M.A. PSYCHOLOGY EXAMINATION

### *Scheme of Examination*

#### M.A. Previous :

- Paper I—Systems of Psychology.
- Paper II—Experimental Psychology
- Paper III—Physiological Psychology
- Paper IV—Statistics & Research Method
- Paper V—Practical.

There shall be four optional groups consisting of theory papers and one practical testing paper carrying 100 marks each. Students are required to opt for any one group :

- |                |         |                             |
|----------------|---------|-----------------------------|
| <i>Group-A</i> | Paper I | Psychology of Organizations |
|                | " II    | Industrial Psychology       |
|                | " III   | Guidance & Counselling      |
|                | " IV    | Vocational Psychology       |
|                |         | <i>or</i>                   |
|                |         | Thesis                      |
|                | " V     | Practical                   |

- Group-B* Paper I Social Psychology  
 " II Group Dynamics  
 " III Communication & Social Influence  
 " IV Correctional Psychology  
 or  
 Thesis  
 " V Practical
- Group-C* Paper I Foundations of Clinical Psychology  
 " II Behaviour modification  
 " III Neuro-Pscho pharmacology  
 " IV Psychiatry  
 or  
 Thesis  
 " V Practical
- Group-D* Paper I Psychology of personality  
 " II Differential Psychology  
 " III Psychopathology  
 " IV Military Psychology  
 or  
 Thesis  
 " V Practical

**SYLLABUS**  
**PSYCHOLOGY**  
**M.A. Previous**

**Paper—Systems & Theories of Psychology.**

**3 Hrs. duration.**

**100 marks.**

Great beginnings—Structural and functional Psychology, Conditioning Wandt, Pavlov, Bechtered, Marx, Wurzburg School, Thorndike—Connectionism, Behaviourism Watson Lashley Hebb, Hormic Psychology, Holistic Psychology, Personalistic Psychology, Neo Behaviourism Skinner inductive Behaviourism; Razran, Evolutionary concepts of learning Psychoanalysis—Individual Psychology, Analytical psychology, Neo theories of Psycho-Analysis Kline, Ferenczi, Alexander, Kardiner, Linton. Rank theory of Will. Horney From in Sullivan Gestalt Psychology—field Theory Phenomenology and understanding of Psychology Problem of Reducationism in Psychology.

*Books for reference :*

1. Wolman, Benjamin B. : Contemporary theories and systems in Psychology, International student reprint. Harper. 1960.
2. Woodworth, R.S. and Sheehan M.R. : Contemporary Schools of Psychology. Methuen, London Ec 4, 1964.
3. Heidebreder, Edna. : Kalyani Publishers, Ludhiana 1961. Seven Psychologies.
4. Murphy, G. and Kovach, J.K. : Historical Introduction to Modern Psychology, 6th Edition Routledge and Kogen Paul Ltd, London

**Paper II—Experimental Psychology :**

**3 hrs. duration.**

**100 marks.**

Meaning of Perception; Nature of perceptual organization; Gestalt, Physiological and Behaviouristic points of view; Perceptual organization, Native acquired controversy on perception.

Shape and Colour perception : Colour constancy, theories of colour constancy, Colour contrast. Contours, Figure-ground articulation, Physical determinants of shape, Illusions, Figural after-effect .

Perception of Space and Movements : Depth perception; Size perception; Nature-nurture question on space perception; Perception of real and apparent movement.

Psychophysics—Indirect scaling; Direct scaling; Steven's power law; Problems in psychophysical scaling.

Signal Detection theory—Sensitivity Vs response criterion; Optimal criteria ROC curves; Application of signal detection theory.

Motivation—Criteria for motivational variables, Sources of drive Consummatory activity, General activity.

Learning—Conditioning, Aversive behaviour, Discrimination learning, Theories of discrimination learning. Theories of learning : Hull, Tolman. Guthrie, Mowrer. Verbal learning and Retention—Basic determinants of verbal learning, Short-term memory, Long-term memory, Interference theory.

Problem solving—Gestalt and behaviouristic interpretations of problem solving, problem solving in human subjects.

### *Books for reference :*

1. Kling, J.W. & Riggs, : Woodworth and Schlosberg's Experimental Psychology, Methuen and Co., Ltd., London, 1972.
2. D'Amato : Experimental Psychology, McGraw Hill, 1970.
3. Osgood, A.E. : Method and Theory in Experimental Psychology, Oxford University Press, 1964.

### **Paper III—Physiological Psychology.**

3 hrs. duration.

100 marks.

Vision—structure and function of the eye, retinal photochemistry; central visual system.

Audition—structure and function of ear, auditory stimulation, frequency discrimination, loudness.

Cell—structural and functional differentiation, types; neuron potentials; excitation, conduction synaptic transmission.

Central nervous system—structure and function of spinal cord, hind-brain, mid-brain and forebrain; peripheral somatic and autonomic nervous system.

Internal environment—carbohydrate, protein and acetylcholine metabolism; enzymes and hormones; homeostasis; psychoactive drugs.

Emotion - nature, theories of emotion; emotion and brain centers (thalamus, hypothalamus, cortex, limbic system, lowerbrain); body changes in emotion; appetitive and aversive effects, autonomic reactivity and emotion.

Characteristics of sleep and waking, neural mechanisms of sleep and waking, theories of sleep, alerting and attention, activity.

Regulation of food intake, physiological and neural mechanisms of hunger, regulation of water intake physiological basis of instinct. Mammalian parental behaviour, I.R.M. Ethologist's view.

Types of learning, effects of brain lesion and stimulation on learning, electrical correlates of conditioning, physiological feedback.

Psychochemistry of memory, learning, intelligence and personality.

*Books for reference :*

1. Morgan, Clifford T. : Physiological Psychology. Third International student edition. McGraw Hill Book Co., New York, 1965.
2. Thompson, Richard F. : Foundations of Physiological Psychology. International edition, Harper and Row, N.Y. and John Weatherhill, Tokyo, 1967.
3. Leukel, Francis. : Introduction to Physiological Psychology. International edition. C.V. Mosbey Co., Saint Louis, 1968.
4. Grossman, Sebastian Peter. : A text Book of Physiological Psychology. John Wiley, New York, 1967.
5. Schuwiltz : Physiological Psychology.



## Paper IV— Statistics and Research Methods.

3 Hours duration.

100 marks

Cumulative Distributions Graphic Methods and Percentiles; The Normal Distribution, the nature of the normal curve, Measuring divergence from normality, applications of the normal probability curve.

Correlation : Product-moment correlation, rank difference, biserial, point biserial, partial correlation and multiple correlation.

Significance of the mean, the difference between means and other Statistics (Mean, standard deviation, percentage and correlation coefficient). Testing experimental hypothesis, the hypothesis of chance, the chi-square test and the null hypothesis.

Analysis of Variance : Analysis of variance, one way and two-way general uses and limitations of analysis of variance; analysis of covariance.

Difference between Parametric and Non-Parametric test; The sign test; The Wilcoxon Matched-pairs Singled-ranks test; The median test; The Mann-Whitney U test: The Kendall Coefficient of concordance, The Friedman two-way Analysis of Variance by Ranks.

### The Language and Approach of Science :

Science and the Scientific Approach, Problems and Hypothesis, Constructs, Variables and Definitions .

### Designs of Research :

Research Design : Meaning, Purpose, and Principles. Research Design and Applications : Randomized Groups, Research Design and Applications : Correlated Groups.

### Types of Research :

Ex-Post Facto Research, Laboratory Experiments. Field Experiments, and Field Studies. Survey Research.

### Methods of Data Collections :

Interview and Interview Schedules, Sociometry, The Semantic Differential, Q Methodology.

Sampling and Randomness, Interpretation of Research data and Research Reporting. The Research Report, Historical

and Methodological Research. The Electronic Digital Computer and Behavioural Research.

*Books for reference :*

1. Garrett, H.E. : Statistics in Psychology and Education Bombay, Vakil, Feffer and Simons Pvt. Ltd.
2. Guilford. J.B. : Fundamental Statistics in Psychology and Education New York, Mc Grow-Hill, (Asian Student's edition).
3. Siegals S. : Nonparametric Statistics for the Behavioural Sciences New York : McGraw Hill (International student edition),
4. Kerlinger F.N. : Foundations of Behavioural Research IIInd edition Holt, Rinehart and Winston, Inc. New York, 1973.
5. Edward, A.L. : Experimental Design in Psychological Research, Third Edition, Amerind Publishing Co., Pvt. Ltd., Delhi 1971.

**Paper V—Experiments/Practicals :**

3 hour's duration—

100 marks

20 marks for Viva, 20 marks Lab. note book, 30 marks conduction & administration, 30 marks for report writing in exam.

1. Reaction time; Choice and discrimination.
2. Psychogalvanic skin response.
3. Depth perception
4. Kinaesthetic Figural after effects.
5. Set in thinking.
6. Problem solving.
7. Signal detection.
8. Need hierarchy by Ranking method.
9. Critical flicker fusion.
10. Spiral effects.
11. Psychophysical experiment on R.L. and D.L.
12. Verbal learning—intra serial inhibition.
13. Incidental v/s intentional learning.
14. Knee jerk conditioning.
15. Content analysis.
16. Attitude scale construction.

17. Preparation of interview schedule.
18. Zeigarnick effect.
19. Spread of Effect.
20. Effect of Knowledge of results on performance.

*Books for reference :*

1. Woodworth, R.S. & Schlosberg, H.: Experimental Psychology, Revised edition, Oxford and I.B.H. Publishing Co., Calcutta, 1956.
2. Postman, L. & Egan, J.P.: Experimental Psychology : an introduction, Indian reprint, Kalyani Publishers, Ludhiana, 1949.
3. Langfeld. H.S. (Ed.): Hand book of Experimental Psychology, Wiley, 1951.
4. Munn, N.L.: A Laboratory Manual in General Experimental Psychology, Houghton Co., Boston, 1948.
5. Garrett, H.E.: Great Experiments in Psychology. N.Y.I. Applition Centery Crofts.
6. Spatz, C.: A Laboratory Manual for Experimental Psychology, Appletin Centery N.Y. 1970.
7. Kerlinger, F.N. Foundations of Behavioural Research, second edition. Holt Rinehart and Winston. Inc., New York, 1973.
8. Woodworth, R.S. and Schlosberg, H. Experimental Psychology, Revised Edition. Oxford and I.B.H. Publishing Co., Calcutta, 1954.

**M.A. FINAL**

**Optionals.**

Group—A

Group—B

Group—C

Group—D

*Group A*

Paper I—Psychology of Organization :

3 hrs. duration—

100 marks

1. Nature, field, approaches and theories of organizational behaviour.

2. Decision-making in organizations, organization and communication.
3. Organizational leadership and role taking.
4. Organizational development and change.
5. Measurement of organizational behaviour.
6. Managerial Psychology : Nature, Conceptual frame work and matrix, psychological evaluation, frame work for manager development.
7. Counseling Approaches to Development : group approaches to development, Case History of Organization development.
8. Managerial personnel systems, managerial obsolescence, organizational analysis.
9. Conflict Resolution : sample programme of intervention.
10. Managerial Motivation : some manager and organizational needs of the future.

*Books for Reference :*

1. *Dubin, A.J.* : The Practice of Managerial Psychology. Pergamon Press Inc. New York, 1972, Selected Chapters, 1 to 13.
2. *Leavitt, H.J.* : Managerial Psychology (3rd Edition) University Chicago Press, 1972.
3. *Yoder, D.* : Personnel Management and Industrial Relations. (6th Edition; Englewood Cliffs N.J.. Prentice-Hall, New Delhi, 1972).
4. *Rosenweig* : Organization and Management
5. *Newmann Warren* : The Process of Management
6. *March, J.G.* : Hand-book of Organization
7. *Korman, A.K.* : Organizational Behaviour
8. *Hicks & Gullett* : Organizations. Theory and Behaviour
9. *Martin, D. Dunette* : Hand-book of Industrial and Organizational Psychology
10. *Katz, D. & Kahn, D.L.* : The Social Psychology of Organization.
11. *H.C. Ganguli* : Structure & Process of Organization. Asia Books.

12. *Likert, R.* : The Human Organization. N.Y. McGraw—Hill, 1967.
13. *Argyris, C.* : Integrating the Individual and the Organization. N.Y. Wiley, 1964.

Paper II—Industrial Psychology, :

3 hrs. duration—

100 marks

1. The roles of the Psychologist in Industry. The field of occupational Psychology: Study of behaviour in work situation and applications of Psychological principles to problems of selection, placement, counselling and training.

2. Design of work Environments: (1) Human Engineering and Physical environment, Techniques of Job Analysis (2) Social environments—Group Dynamics in Industry.

3. Personnel Psychology: Selection, Training, placement, promotion, counselling, motivations, job satisfaction.

4. Special study of problems of Fatigue, Boredom and Accidents.

5. Consumer Behaviour: Study of consumer preferences effects of advertising.

6. Industrial Morale

7. The Nature and Scope of engineering psychology, Its application to industry.

8. Efficiency at work: The concept of efficiency, the work curve its characteristics.

(a) The work methods; hours of work, nature of work, fatigue and boredom, rest pauses.

(b) The personal factors; age, abilities, interest, job satisfaction.

(c) The working environment: noise, illumination, atmospheric conditions.

9. Increasing efficiency at Work: Improving the work of methods :

(a) Time and Motion study, its contribution and failure, resistance to time and motion studies, need for allowances in time and motion study.

- (b) Work and equipment design: criteria in evaluation of job-related factors, job design, human factors, engineering information input processes, mediation processes, action processes, methods design, work space and its arrangement, human factors in Job design.

10. Accident and safety: The human and economic costs of accidents, accident record and statistics, the causes of accidents, situational and individual factors related to accidents, accident reduction.

*Books for Reference :*

1. Tiffin J. and McCormick E.J. : Industrial Psychology (Prentice Hall) 6th Edn., 1975.
2. McCormick E.J. : Human factors engineering and design (McGraw Hill), 4th Edn., 1976.
3. Mair N.R.F.—Principles of Human relations
4. Ghiselli & Brown—Personnel and Industrial Psychology
5. Gilmer—Industrial Psychology
6. Myer—Industrial Psychology
7. Dunnette M.D.—Hand Book of Industrial & Organizational Psychology.
8. Maier, N.R.F.—Principles of Engineering.

**Paper III—Guidance and Counselling :**

3 hour's duration—

100 marks

1. Meaning and definition of guidance; Aims of guidance; Basic principles of guidance; Kinds of guidance; Importance of educational and vocational guidance; Psychological and social bases of guidance.

2. Information getting; Testing in guidance; Cumulative record; interview and counselling in guidance.

3. Need for organized guidance programme, Guidance programmes in school, group guidance. Helping students to solve personal problems.

4. Complexities in vocational guidance, Sources of occupational information, Helping students to find jobs.

5. Follow up services in guidance, Evaluation of guidance services, Organization of guidance services, Staffing Guidance services.

1. History of Counselling
2. Characteristic of the Counsellee of Counsellor
3. Expectancy and Goals of Counselling.
4. Approaches to Counselling.
5. Counselling Content process.
6. Counselling techniques and practices

*Reference Books :*

1. Paterson—Theories of Counselling and Psychotherapy (Harper 1973)
2. Fuster—J.M.—Psychological Counselling in India, Bombay Mc Millon.
3. Bordin E.S. Psychological Counselling, Tolbert E.L. Intrad. IInd Edition. M.C. Graw Hill, 1968
4. Osipo S.M. and Walshow--Behaviour Change in Counselling-Readings
5. Adws, J.F. Problems in Counselling
6. Jones, A.J. : Principles of Guidance, Sixth ed., Mc-Graw Hill, New York, 1970.
7. Myers, G.E.: Principles and Techniques of Vocational Guidance, McGraw-Hill, New York, 1941.
8. Humphreys, J.A.: Guidance Services. Science Research and Traxle, Q.E. Associates, Chicago, 1954.

**Paper IV—Vocational Psychology :**

3 hour's duration—

100 marks

1. Historical antecedents of vocational Psychology
2. Psychoanalytic concept of career choice.
3. Personality and career.
4. Social Systems and career Decisions.
5. Choice satisfaction and performance of work Roles.
6. Attitude towards work.
7. Super theory: Ginsberg's definition of choice and basis of criticism, Ginsberg's theory and its limitations.

Elements of adequate theory of vocational development; Steffler's theory.

8. Holland's theory; Theory in terms of occupational environmental model, personal orientations, the level hierarchy; Role of developmental hierarchy and hypothesis concerning it; some potential areas of research in Holland's theory; Roe's theory.

9. Darley and Hagenah's theory; Relation between occupational level and Job satisfaction; job satisfaction and adjustment; meaning of jobs in terms of intrinsic and extrinsic satisfactions; Occupational dissatisfaction and Congruence between Job and interest patterns; Outcome of job satisfaction.

10. Measures of vocational choice; Individual differences in vocational choice; Vocational choice as a developmental process and the stages of development, Indecision in vocational choice, Unrealism as vocational choice.

11. Vocational adjustment and its relation to general adjustment, Developmental stages in Vocational adjustment, Career pattern, Development in vocational adjustment in vocational satisfaction.

#### *Books for Reference :*

1. Hopson, B. and Hays, J.: The Theory and Practice of Vocational Psychology. N.Y. Pergamon Press.
2. Crites, J.O. : Vocational Psychology : A study of vocational behaviour and development, McGraw-Hill Book Co., New York, 1969.
3. Osipow, S.H. : Theories of Career Development N.Y. Appleton centry 1968.
4. Vroom, V. Work & Motivation.
5. Bass and Barrett : Man work and organization, Allyn Bacon, 1968.

#### **Paper V—Testing/Practical:**

##### *Group-'A'*

3 hour's duration—

100 marks

30 marks for conduction and administration, 20 marks for Viva, 30 marks for report writing in Exam., and 20 marks for practical note book.

1. Report writing techniques



2. Cattell's 16 P.F.
3. Rorschach Test
4. T.A.T.
5. Sensitivity sensitivity
6. Sentence completion test
7. Picture frustration test
8. E.P.I.
9. Test construction
10. Case Study—At least one case.
11. D.A.T.
12. Scientific Aptitude
13. Clerical Aptitude
14. Interest Test
15. Preference Record (K.P.R), (N.P.R.)
16. Work Attitude Test
17. Job involvement Test.
18. Job satisfaction Test
19. Work Motivation Test.
20. Study Habit Test.

*Group-'B' :*

**Social Psychology**

Paper I	3 hours—	100 marks
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1. Nature of Social Psychology.
2. Knowing and Evaluating persons
3. Inter-group attitudes
4. Inter-personal attraction
5. Social power
6. Emerging Norms and conformity
7. Leadership
8. Group productivity and satisfaction
9. Social role.
10. Role Strain and its Resolution
11. Processes of Social learning
12. Cognitive Control and Social Motivation
13. Self and Personality.

*Books for Reference :*

1. Secord, Paul F. and Backman, Carl W. Social Psychology International Student Edition. Mc-Graw-Hill, Kogakusha Ltd., New Delhi, 1974.
2. Maccoby, E.E., Newcomb, T.M., Hartley, E.L. Readings in Social Psychology, Third edition, New York, Holt, Rinehart and Winston, INC. 1958.
3. Sherif. M. and Sherif. C.W. An outline of Social Psychology, New York : Harper, 1956.

## Paper II—

## Group Dynamics

1. The Concept of group Dynamics—application to Different areas.
2. Approaches to the Study of group (Frend's Bales' and Cattell's).
3. Group structure and Inter personal process
4. Group Cohesiveness
5. Personal Environment of Groups
6. Group goals and group locomotion
7. Structural properties of groups : Lippitetal. Bavelas and Kellay
8. Techneques for changing group behaviour
9. Group problem solving and decission making
10. Inter-group relations.

*Books for referenve :*

1. Darwin Cartwright & Alvin Zander  
Group dynamics—Research and Theory
2. Marvin E. Shaw—Group Dynamics—T.M.H. Publication 1977.
3. Lindzey and Aronosn—Handbook of Social Psychology Vol. IV.
4. Thibaut. and Kelly Herald  
The Social Psychology of Group

## Paper III—Psychology of Communication and Social Influence :

3 hrs. duration—100 marks

1. Social Influence, Conformity Bias, and the Study of Active Minorities :  
The Conformity Bias and the Reasons to Challenge it.  
The source of social influence; Dependency or style of behaviour.  
Conformity, Normalization, Innovation, and forms of Social Conflict.  
Six Experiments in which consistency is considered directly as a source of influence.
2. Communication Networks: Introduction. Research Methodology. Effects of Networks upon group Process. Explanatory Concepts. Independence and Saturation in Relation to Experimental Variables,
3. Commnication Processes and the Properties of Language: Language as a Field of Social Psychology.

Theoretical and Experimental Observations of the  
Linguistic—Behaviour.  
Some Open Questions.

4. A Structural Balance Approach to the Analysis of Communication Effects :  
Introduction. Balance Theory. The Communication Model.  
Studies Based upon the Communication Model. Other Relevant Evidence. Some Critical Problems.
5. Processes of Social Influence
6. Persuasive communication and influence
7. Man communication and social structure
8. Status and communication
9. Cultural influences upon cognitive processes.

*Books for reference :*

1. Berkowitz, L. Advances in Experimental Social Psychology, Vol. 1, 3, 6, Academic Press.
2. Secord, P.F. and Backman, C.W.—Social Psychology Mc-Graw Hill, 1974.

Paper IV—Correctional Psychology :

1. Field of Correctional Psychology, Functions of Prison Psychologists. Court Psychologists and reformatory School Psychologists.
2. Concepts of Crime and Criminal Child adolescent, young adult, and aged offenders. Incidence of crime.
3. Psychological and Social factors in crime-intelligence, Extraversion, Neuroticism Security, Anxiety, Adjustment Ego Strength, Needs for achievement and power, Parental behaviour and discipline, ordinal position and broken home.
4. Approaches to etiology—Biological Sociological Psychological.
5. Causal research—Approaches and their Limitations
6. Psychological measures of criminality: Inventory, or self report, questionnaires, psychological tests and projective technique.

7. Special reference to the work of the Psychologist.
8. Current research problems and techniques.

*Books for reference :*

1. Tappen, T.W. : Juvenile Delinquency Mc-Graw-Hill, 1960.
2. Eysenck, H.J. : Crime and Personality, London, Routledge and Kegan Paul, 1964
3. Abrahmasen, : The Psychology of Crime.
4. U.P. Singh : —Crime & Personality.  
Or  
Thesis.

*Group B :*

Paper V—Testing/Practical :

3 hrs., duration—

100 marks

30 marks for conduction and administration, 20 marks for Viva, 30 marks for report writing in exam. and 20 marks for practical note Book.

1. Group Dynamics—testing interaction
2. Perceptual Defense
3. Effect of need on Perception
4. Inter person Perception
5. Need-achievement
6. Interpersonal Attraction--and Dissonance
7. Internal-External control
8. Personal Judgement Scale
9. Attitude towards Nationalization
10. Effect of group Judgement on Individual
11. Cattell's 16 P.F.
12. Rorschah Test.
13. T.A.T.
14. Sentence completion
15. E.P.I.
16. P.F. Study
17. Test construction
18. Case study
19. Report Writing
20. Sensory Reactivity.

*Group-'C'*

Paper I—Foundations of Clinical Psychology.

3 hrs., duration—

100 marks

1. Nature and problems of Clinical Psychology. The Current status of clinical psychology. Role of Clinical psychologist. Training of Clinical Psychologist. Clinical psychology and profession. Professional Ethics.

2. Normality and Adjustment :

Different models of mental health, exposure to psychiatric treatment, psychiatric diagnosis, social maladjustment, objectively reported psychological symptoms, subjective unhappiness resistance to stress. Other criteria : cultural social criterion, legal criterion, statistical criterion, ideal criterion, clinical criterion. Behavioural and psychoanalytic models of normality.

3. *Clinical and other methods :*

Method of observation: field observation; introspection; case study; interview; psychological tests; experimental method.

The Clinical Method

Nature of clinical method; criticisms of clinical method;; a comparison of the clinical method of personality description with the process of theory construction; case history method.

4. *Personality Description—Problems of Measurement :*

Theory and measurement; levels of personality and techniques of measurement; some properties of measuring instruments—reliability, norms, validity; Personality questionnaire: projective tests, semiprojective tests.

5. *Specific Diagnostic Measurement Techniques :*

Minnesota Multiphasic Personality Inventory; Rorschach; The Thematic Apperception Test. Wechsler Adult Intelligence Scale Bender Gestalt test and Gold stein—Scheerer Tests of Organicity.

6. *Formal Diagnosis :*

Different levels of diagnosis; Nomenclature and classification of psychopathology, Symptomatology of psychoneuroses, functional psychoses and personality disorders.

7. *Psychotherapeutic Methods :*

Supportive; re-educative and reconstructive.

8. Psychoanalytic Therapy.

9. Behaviour Therapy.
10. Other psychotherapies: Client-centered; group and psychodrama Hypnotherapy, Logotherapy, Transactional analysis.

*Reference Books :*

1. Dana, R.H. Foundations of Clinical Psychology, Van Nostrand N.Y., 1966.
2. Wolman, B.B. Hand-Book of Clinical Psychology, McGraw-Hill Co., N.Y., 1965.
3. Shaffer, G.W. and Lazarus, R.S. Fundamental Concepts in Clinical Psychology, Kogakusha Co., Tokyo.
4. Sunderberg and Tyler: Clinical Psychology, 2nd Ed., Methuen and Co., London, 1972.
5. Wolberg, L.R. The Techniques of Psychotherapy. Second Edition. Vol. I and II, Grune and Stratton, New York, 1967.

**Paper II—Behaviour Modification.**

3 hours duration—

100 marks

1. The Emergence of Behaviour Modification; Definition of Behaviour Modification, Treatment Implications of Medical versus, Psychological Model. Comparison of Traditional Psychotherapy and Behaviour Therapy.

2. *Behaviour Modification Research :*

Design and Tactics. The History of Behaviour Modification Research. Scientific Research and Behaviour Modifications. . The Domains of variables in Behaviour Modification Research.. Research Design and possible Level of Product. Tactical use of Different levels of Research.

3. Operant conditioning and Extinction as therapeutic Techniques Clinical Indications.

4. Token Economy.

5. Systematic Desensitization. Reciprocal Inhibition as a Therapeutic Principle, Wolpe's Method of Systematic, Desensitization Based on Relaxation. Variants of Imaginal Desensitization. Real Life Desensitization.

6. Flooding (Implosive) Therapy and Allied Treatments.

7. Social Modeling a comprehensive view.

Clinical Applications of Social, Modeling, Issues Involved in Social Modeling.

8. Aversion Therapy.

9. Behaviour Therapy and self control; Techniques and Implications Expressive Training.

10. Some comments on the Foundations of Behaviour Therapy. Rationale, Practice, and Future of Behaviour Therapy, Behaviour Modification in Perspective.

*Reference Books :*

1. Sherman, A.R. Behaviour Modification. Theory and practice. Wordsworth Publishing Co., 1973.
2. Agras, W.S. Behaviour Modification; Principles and Clinical Applications, Little Brown Co., Boston, 1972.
3. Franks, C.M. Behaviour Therapy; Appraisal and status, Mc-Graw Hill Co., N.Y., 1969.
4. Ullmann, L.P. and Krazner, L. Case Studies in Behaviour Modification. Holt, Rinehart and Winston, Inc. N.Y. 1966.
5. Wolpe, J. Psychotherapy By--Reciprocal Inhibition: Stanford: Stanford University Press, 1958,
6. Wolpe, J. and Lazarus, A. Behaviour Therapy Techniques Pergmon Press, N.Y. 1966.
7. Ayllon, T. and Azrin, N.H. The Token Economy: A Motivational System for theory and Rehabilitation. Appleton-Century Crofts N.Y., 1968.
8. Bondura, A. Principles of Behaviour Modification.

**Paper III—Neuro-Psychopharmacology:**

3 hour's duration—100 marks.

**1. Brain Damage and the Evaluation of its Effects :**

Factors influencing brain damage nature of injury, state of the organism; extent of localization of sensory and motor functions. theoretical issues underlying localization equipotentiality theory, mass action theory, regional equipotentiality of Meyer, Soviet view of Luria in terms of complex function systems. Problems of methodology and interpretation.

**2. The Frontal Lobes :**

Lesions of frontal lobe and human behaviour, intellectual function, assessment of intellectual decline, effects of frontal lobe lesion on personality Methods of evaluation; Psychometric and the

Psychodiagnostic, effects of frontal lobe lesions on memory and the learning.

Effects of Lesions of frontal lobe on behaviour of non-human primates; delayed response deficit; cue reversals and learning set handicaps.

### 3. The Temporal lobes :

Bilateral temporal lobe damage in man; clinical cases regarding memory disturbances; Unilateral temporal lesions in man—its effects on intellectual abilities, learning and memory, preception. sexual behaviour; Sex differences in effects of temporal lobectomy. Effects of temporal lobe lesions in animals; Hippo-campal lesions; Intratemporal lesions.

### 4. The Split Brain :

Visual field defects and their related perceptual disturbances. other sensory and perceptual disturbances Spatial abilities; constructional apraxia; The Gerstmann syndrome.

Posterior lesions in animal: lesion in visual projection area, visual and tactile discrimination.

### 5. Return to Basic Issues :

Agensis of corpus callosum: The split brain in man. The split brain in animals.—Critical parts of the corpus callosum: The nature of callosal transfer: The corpus callosum and behaviour information processing in the split brain.

Asymmetry of functions in the brain: Anatomical considerations: the influence of subcortical structures; Future Perspectives.

### 6. *Origin, Nature and Scope of Psychopharmacology :*

Boundaries of Psychopharmacology, use of Psychopharmacological agents over ages, concerns of Psychopharmacology—its psychological and behavioural effects, classification of Psychotropic drugs into sedatives, hypnotics, stumulants, major and minor tranquilizers, antidepressives, hallucinogenics on the basis of major behaviour effects.

### 7. *Drugs, Learning and Memory :*

Psychopharmacologists' interests in reversal of drug effects, Research strategy of psychopharmacologists studying drug effects on learning, Steinberg's series of experiments on Nitrous Oxides. Drug effects on human memory, Alcohol and phantasy level—Clinical studies of drug effect on memory.



8. *Psychodelics and Psychotomimetics :*

Nescaline, L.S.D.—25, clues to schizophrenia, Model Psychosis and L.S.D. Perceptual changes related to L.S.D., L.S.D. and creativity, Effects of L.S.D. on thinking Dissimilarities of Model and Natural Psychosis, L.S.D. and disorders of attention.

9. *Measuring Mental Illness with drugs :*

Concept of sedation threshold, Personality types and drug tolerance, drug techniques devised to measure autonomic reactivity neuroticism. Measurement of endogenous and reactive depression in terms of sedation threshold/E.C.T. Methodological difficulties common to all Psychopharmacological research into Schizophrenia.

10. *Drugs, Behaviour and Brain :*

E.E.G. changes as indicators of brain activity due to drug effects, Reticular activating system, Attention and drug effects, G.S.R. inhibition threshold E.E.G., Behavioural arousal and drugs, Synaptic transmission and psychopharmacological agents.

*Books for Reference :*

1. Edgar Miller: Clinical Neuropsychology, Penguin, 1972
2. Robert L. Isaacson: Basic Readings in Neuropsychology, Harper Row, 1964.
3. Drugs and human Behaviour by Gordon Claridge, 1972, Allien Lane. Suggested Chapters : 1,4,5,7,8.
4. Drugs: Medical, Psychological and Social facts, by Peter Laurie (Penguin Books).
5. Psychopharmacology by S.K. Nathan and O. Winfred. The American Association for the advancement of Science, 1956.

Paper IV—Psychiatry :

3 hour's duration—

100 marks

1. The Foundations of Psychiatry. The Field of Psychiatry. Contemporary Schools of Psychiatry.

2. Examination of the Psychiatric Patient. Psychiatric Interview. Method of Psychiatric History taking and Mental Status Examination. Scheme for case-taking. scheme for Mental Status Examination. Psychiatric Report.

3. Schizophrenia. Paranoid States. Affective Disorders.

4. Neurotic Reactions. Anxiety State Hysteria. Obsessive compulsive Disorders. Phobia. Personality Disorders. Sexual Anomalies and Perversions.

5. Organic Disorders; Delirious and other Acute states. Delirium Tremens. Confusion States. Encephalitis. Encephalopathy. Head Injury. Twilight States.

6. Chronic Brain Syndromes—Dementia, Senile Dementia, Cerebral Arteriopathy, Presenile Dementia.

7. Alzheimer disease; Pick's disease; Jacob—Creutzfeldt disease; Huntington's Chorea; neurosyphilis; cerebral tumor; cerebral trauma; Korsakoff's syndrome, Epilepsy, Mental subnormality.

8. Treatment I; Psychological and Social principles or psychiatric care, the therapeutic milieu occupational, industrial and recreational therapy; psychotherapy.

9. Treatment II—Organic Therapies: Anti Psychotic Drugs. Anti-Depressant Drugs. Minor and Major Tranquilizers. Sedatives. Hypnotics. Narcotherapy. Convulsive. Therapies. Insulin Coma Treatment. Psychosurgery. Lithium Therapy. Miscellaneous Organic Therapies.

10. Social Psychiatry. Studies of Prevalence and Incidence. Socio-economic Factors. Suicide. Attempted Suicide. Preventive Psychiatry.

#### *Reference Books :*

1. Anderson, S.W. and Trethowan, W.N. Psychiatry, Balilieve Tindal, London, 1973.
2. Slater, E. and Roth, M. Clinical Psychiatry (3rd Ed.) Baltimore: The Williams and Wiltins Co., (1977).
3. Freedman, A.L., Kaplan, H.I. and Sadock, B.J. Modern Synopsis of Comprehensive Text Book of Psychiatry. Baltimore, The Williams and Wiltins Co., 1976.
4. Kolb., L.C. Noyes, Modern Clinical Psychiatry, Oxford and I.B.H. Publishing Co., 1968.
5. Kolb, L.C. Modern Clinical Psychiatry, London, W.B. Saunders Co., 1973.
6. Henduson and Gillispie's; Text Book of Psychiatry, 1969.

#### **Paper V—Psychological Testing/Practical :**

##### *Group—'C'*

1. Report writing technique
2. Cattells 16 P.F.
3. Rorschach Test
4. T.A.T.
5. Sensitivity resistance

6. Sentence Completion Test
7. Picture frustration test
8. E.P.I.
9. Test construction
10. Case study

#### Formulation of Diagnosis :

11. A case history method
12. Mental Examination
13. Symptom sign Inventory
14. M.M.P.I. Personality description of the Patient
15. Wechsler Memory Scale—Assessment of Memory.
16. Bender Gestalt Test—Assessment of Organicity
17. M.P.D. Test—Diagnostic Applications
18. Spiral After effect—Test of Organicity and personality.
19. Cure of Stuttering—use of Stammering Suppressor.
20. Modifying some Maladaptive behaviour—Aversive Therapy Limit.

#### Group-'D'

#### Paper I—Psychology of Personality :

3 hour's duration—

Max. Marks—100

1. Idiographical Versus Nomothetic approaches to personality. Clinical versus statistical approach to personality.
2. Personality growth and concept of self-concept of functional autonomy.
3. Methodological issues in personality measurement
  - (a) Convergent and discriminant validation
  - (b) Multi-trait and multi-factor method
  - (c) Response set, Response bias and Response Style. social desirability factor and acquiescence.
4. Cattells theory, Guilford theory, Eysenck Theory.
5. S-R Theories—Dollard and Miller, Mowrer, Wolpe
6. Concept of awareness and personality.
7. Drive theory and personality, cognitive aspects of personality, Creativity and personality.
8. Culture and personality.



### Paper III—Psychopathology :

3 hrs. duration—

100 marks

#### Classification and Psychopathology :

Psychiatric classification; psychoticism, neuroticism and extraversion; syndromes of psychosis; classification of children's, illnesses; endogenous versus reactive depression; process versus reactive schizophrenia.

#### Culture and Symptoms :

Schizophrenia; manic depressive psychosis; Psychoneurosis; Sexual deviation; alcoholism; psychodisorders; culturebound syndromes.

#### Disorders of Thinking :

Thinking in normal people; intellectual deterioration and mental illness; indirect measures of deterioration; behavioural abnormalities associated with general intellectual deterioration; disorders of perception: disorders of perceptual set; disorders of conceptualization; overinclusive thinking; disorders of manipulation.

#### Memory Disorder :

Nature of memory disorder, effects of pathology, psychometric considerations, effects of E.C.T., effect of temporal lobectomy.

#### Depression : Assessment and Etiology :

Assessment of depression—self report and rating scales; endocrine aspects of depression: thyroid disturbances and depressive disorder; gonadal function and depressive disorder; salivary output: electrolytes and depressive disorder; The E.E.G. in depression; the sedation threshold; muscle tension; motor reaction time; conditioned response studies; Etiology of depression—Parental deprivation.

#### Phobias :

Nature of phobias; etiology of phobia—a behaviourist view, assessment techniques; modification techniques, theoretical considerations.

#### Obsessions and compulsions :

Experimental evidence for compulsive behaviour and its assessment, important factors in the development of the compulsive symptom, techniques for modifying the compulsive symptom.

**Stuttering :**

Stuttering and associated phenomena, lawful variability in stuttering, prevalence and onset of stuttering, assessment, of stuttering, modification of stuttering.

**Enuresis :**

Nature of enuresis, theories of enuresis, the treatment of enuresis, results of different treatment methods.

**Alcoholism :**

Definition and incidence of alcoholism, description and the assessment of the alcoholic, learning theory and the effects of alcohol alcoholism as a problem in behaviour modification, broad-spectrum behavioural approaches.

**Asthma :**

Description of asthma, the role of psychological variable in asthma, tools and cues for assessing the relevant variables, treatment techniques.

**Books Recommended :**

1. Costello, C.G.: Symptoms of Psychopathology : A Hand Book, John Wiley, 1970.
2. Chapters Suggested: 1, 2, 3, 4, 7, 10, 11, 13, 15, 18, & 24.  
Suinin, R.M. Fundamentals of Behaviour Pathology John Wiley.
3. Eysenck: Hand-book of Abnormal Psychology
4. Cameron: Personality development and Psychopathology—a dynamic approach.

**Paper IV—Military Psychology :**

3 hrs. duration—100 marks

1. Historical Introduction, Importance and Scope of Military Psychology.

2. Personal Selection—officers and other ranks. Selection Techniques : (i) Tests for assessing Intelligence aptitude, personality and leadership traits (ii) Group testing procedures, (iii) Interview, (iv) Rating Scales development and application.

3. Psychological Principles underlying Military Training, Methods of Training : for fighting forces, Military leadership Training, Indoctrination and Discipline, Combat Training, Evaluation of Training.

4. Psychological Factors of Peace and War : Peace, War and Culture-patterns, War and aggressive tendencies, international tensions.

5. Morale and Motivation of Soldiers.

6. Psychological Warfare : Nature, Scope and Principles: Media, Methods and Techniques in Psychological Warfare; Evaluation of Effectiveness.

7. Psychological Aspects of Civilian Defence.

*Books for Reference :*

1. Boring, E.F. (ed), Psychology for the Armed Services.
2. Vernon. P.E. and Party, J.B. Personnel Selection in the British Forces.
3. Bray, C.N. Psychology and Military Proficiency.
4. Raj Narain—Military Psychology National Psychological Co., Agra, 1979.

**Psychological Testing/Practical :**

*Group-'D'*

3 hrs. duration—

Max. Marks : 100

1. M.P.I.
2. M.M.P.I.
3. Rorschach Ranking Confirmity Test
4. N. Act. Test
5. N. Af. Test
6. Creativity Test
7. Mosaic Test
8. Cardiac Reactivity and Personality
9. Luscher Colour Test of Personality
10. E.C.G. and Personality Type
11. Report Writing Technique
12. Cattells 16 P.F.
13. Rorschach
14. T A T
15. Sensitivity Reacture
16. Sentence Completion
17. Picture Frustration
18. E.P.I.
19. Test Construction
20. Case History

## APPENDIX-II

For the session 1979-80 only

IIIrd Semester

December, 1979

Group-'B'

Paper I—Social Psychology :

3 hour's duration— 50 marks

1. Nature of Social Psychology
2. Knowing and evaluating persons
3. Intergroup attitudes
4. Interpersonal attraction
5. Social Power
6. Emerging norms and conformity

*Books for reference :*

1. Secord, Paul F. and Backman, Carl W. Social Psychology International Student Edition, Mc-Graw Hill, Kogakusha Ltd., New Delhi-1974.
2. Maccoby E.E., Newcomb. T.M., Hartley, E.L. Readings in social Psychology, Third Edition, New York, Holt. Rinehart and Winston INC 1958.
3. Sherif, M. and Sherif C.W. An out line of Social Psychology New York, Harper, 1956.

Paper II—Group Dynamics :

3 hrs. duration—

50 marks

1. The concept of Group Dynamics--Application to different areas.
2. Approaches to the study of group: Frennd's Bales and cattellis.
3. Group Structure and interpersonal process.
4. Group Cohesiveness
5. Personal environment of groups

*Books for reference :-*

1. Dorwin Cartwright and Alvin Zander: Group Dynamics: Research and Theory Row, Peterson and Company, New York, 1958.
2. Marvin E. Shaw--Group Dynamics T.M.H. Publications 1977.



3. Lindzey G, and Aronson. E, Hand Book of social Psy.  
Volume IV.
4. Thilaut, J. and Kelly Herald: The Social Psychology of  
Group.

**Paper III—Psychology of Communication and Social Influence :**

3 hour's duration—

50 marks

1. Social Influence. Conformity Bias, and the Study of  
Active Minorities
2. Communication net works
3. Communication Processes and the Properties of Language
4. A structural Balance Approach to the Analysis of Com-  
munication Effects.

*Books for reference :*

1. Berkowity—Advances in Experimental Social Psychology  
Vol. 1, 3, 6 Academic Press.
2. Secord, P.F. and Backman C.W.;—Social Psychology  
Mc. Graw Hill, 1974.

**Paper IV—Correctional Psychology :**

3 hour's duration—

50 marks

1. Field of correctional psychology
2. Concepts of crime and criminals
3. Psychological and social factors in crime
4. Approaches to Etiology—Biological, Sociological and  
Psychological.

*Books for referenve :*

1. Tappen, T.W. : Juvenile Delinquency—Mc. Graw Hill.  
1960.
2. Eysenck, H.J. Crime and personality, Landown, Routle-  
dge and Kegan Paul, 1964.
3. Abrahamson. The Psychology of Crime,
4. U.P. Singh—Crime and Personality.

OR

Thesis :

Group-‘B’

**Paper V—Testing/Practical :**

3 hour's duration—

50 marks

15 marks for conduction and administration, 10 marks for Viva, 15 marks for report writing and examination and 10 marks for practical note book.

1. Group Dynamics—testing interaction
2. Perceptual Defence
3. Effect of Need on Perception
4. Interperson—perception
5. Need--achievement
6. Interpersonal Attraction and Dissonance
7. Internal--External control
8. Personal Judgement Scale
9. Attitude towards rationalization
10. Effect of Group judgement on Individual

IVth Semester

May, 1980

*Group-'B'***Paper I—Social Psychology :**

3 hour's duration—

50 marks

1. Leadership
2. Group productivity and Satisfaction
3. Social role.
4. Role Strain and its Resolution
5. Processes of social learning
6. Cognitive control and social motivation
7. Self and personality

*Books for reference :*

1. Secord, P.F. and Backman C.W.—Social Psychology  
Mc. Graw Hill, 1974.
2. Maccoby, E.E., Newcomb, T.M. and Hartley, E.L.,  
Readings in Social Psychology, Third edition, New York  
Holt Rinehart and Winston, Inc., 1958.
3. Sherif, M. and Sherif, C.W. An outline of Social  
Psychology, New York: Harper 1956.

**Paper II—Group Dynamics :**

3 hour's duration—

50 marks

1. Group goals and Locomotion
2. Structural properties of Groups ; Lippitt and others,  
Kelley, Bavelas,

3. Techniques of Changing group behaviour
4. Group problem solving and decision making.
5. Inter-group relations

*Books for reference :*

1. Dorwin Cartwright and Alvin Zander, Group-Dynamic—Research and Theory—Row Peterson—New York, 1958.
2. Marvin E. Shaw—Group Dynamics T.M.H. Publication 1977.
3. Lindsey, G and Aronson, E. Hand Book of Social Psychology.
4. Thibaut, J. and Kelly Herald--The Social Psychology of Group.

Paper III—Psychology of Communication and Social Influence:  
3 hour's duration— 50 marks

1. Processes of Social Influence
2. Persuasive Communication and influence
3. Mass Communication and Social Structure
4. Status and Communication
5. Cultural influences upon cognitive processes

*Books for reference :*

1. Berkowitz, L. Advances in Experimental Social Psychology Vol. 1, 3, 6 Academic Press.
2. Secord, P.F. and Backmen, C.W.--Social Psychology. M.C. Graw Hill, 1974.

Paper IV—Correctional Psychology : 50 marks  
3 hour's duration—

1. Causal Research: Approaches and their limitations.
2. Psychological measures of Criminality; Inventory or self report, questionnaires, psychological tests and projective techniques.
3. Special reference to the work of the psychology.
4. Current research problems and techniques.

*Books for reference :*

1. Tappen, T.W. Juvenile Delinquency, Mc Graw Hill, 1960
2. Eysenck, H.J. Crime and Personality, London, Routledge and Kegan Paul, 1964.

3. Abrahamson; The Psychology of Crime.
4. U.P. Singh; Crime and personality  
Or  
Thesis.

Paper V—Testing/Practical :

Group—B

3 hour's duration—

50 marks

15 marks for conduction and administration, 10 marks for Viva, 15 marks for report writing in examination and 10 marks for practical Note book :

1. Cattell's 16 P.F.
  2. Ror Schach Test
  3. T.A.T.
  4. Sentence Completion
  5. E.P.L.
  6. P.F. Study
  7. Test construction
  8. Case study
  9. Report Writing
  10. Sensory Reactivity
-

दिनांक 26 एवं 27 मार्च, 1979 को कुलपति सचिवालय (नवीन भवन) विश्वविद्यालय प्रांगण, जयपुर में सम्पन्न हुई आयुर्वेद अध्ययन मण्डल की बैठक का कार्यवाही विवरण ।

### उपस्थिति :

1. वैद्य मदनलाल शर्मा	(संयोजक)
2. वैद्य हरिप्रसाद शर्मा	(सदस्य)
3. „ नरहरि शास्त्री	„
4. „ घनश्याम दास शास्त्री	„
5. „ ईश्वरदास स्वामी	„
6. „ हनुमत्सहाय शर्मा	„
7. „ प्रभुदयाल पारीक	„
8. „ हरिशंकर शर्मा	„
9. „ रंगनाथ शर्मा	„
10. „ मोहनलाल भारद्वाज	„
11. „ अमरनाथ शर्मा	„

(श्री लक्ष्मीनारायण शर्मा, श्री रामदयाल शर्मा एवं श्री मदन कुमार शास्त्री अनुपस्थित रहे ।)

1. विश्वविद्यालय हैण्डबुक खण्ड 2 के परिनियम 126 डी (iii) के प्रावधानान्तर्गत मण्डल के संयोजनाय श्री मदनलाल शर्मा, स्नातकोत्तर रसशास्त्र भैषज्य कल्पना विभागाध्यक्ष, आचार्य, मदनमोहन मालवीय राजकीय आयुर्वेद महाविद्यालय, उदयपुर को तीन वर्षीय कालावधि के लिए संयोजक नियुक्त किया गया ।

2. विश्वविद्यालय के अविनियम की धारा 34 (4) (iv) के प्रावधानान्तर्गत परीक्षक चयन समिति पर वर्ष 1979 के लिए मंडल के संयोजक के अतिरिक्त एक अन्य सदस्य के रूप में श्री घनश्याम शास्त्री, मौलिक सिद्धान्त विभागाध्यक्ष, मदनमोहन मालवीय राजकीय आयुर्वेद महाविद्यालय, उदयपुर को निर्वाचित किया गया ।

3. मण्डल ने सत्र 1978 की विभिन्न आयुर्वेद परीक्षाओं के परीक्षक प्रतिवेदनों का अवलोकन करने के उपरान्त निम्नलिखित टिप्पणियां प्रस्तुत की :—

(अ) परीक्षक प्रतिवेदन संख्या में पूर्ण नहीं हैं समस्त परीक्षकों के प्रतिवेदन मण्डल के विचारार्थ प्रस्तुत जिये जाने चाहिये।

(ब) मौलिक सिद्धान्त :—विभागान्तर्गत संस्कृत भाषा के अनुवाद व व्याकरण पर विशेष ध्यान दिया जावे। द्रव्य गुण विज्ञान की परिभाषाओं के सम्बन्ध में कन्ठाग्र तैयार कराने के साथ-साथ उनके अर्थ एवं भावों को छात्रों को स्पष्ट ज्ञान कराया जाना परमावश्यक है, एवं योगों के ज्ञान में द्रव्यों के शास्त्रीय नामों, पर्यायवाची नामों, प्रचलित नामों तथा द्रव्य के असली एवं नकली के लक्षणों का स्पष्ट समुचित ज्ञान कराना आवश्यक है। रस-शास्त्र विषयान्तर्गत केवल निर्धारित पुस्तकों का ज्ञान ही पर्याप्त नहीं है अपितु संदर्भित पुस्तकों का ज्ञान कराना भी अपेक्षित है। इन आशयों से आयुर्वेद महाविद्यालय के प्राचार्यों को निर्देशित किया जावे।

(स) स्नातकोत्तर परीक्षाओं का संचालन करने वाले आयुर्वेद महाविद्यालयों में स्नातकोत्तर स्तर की वैज्ञानिक प्रगति के लिये, छात्रों के ज्ञानवर्धन एवं परीक्षा के स्तर की समुन्नता के लिये तथाविध प्रयोगशालाओं, पुस्तकालयों तथा अन्य सुविधाओं की व्यवस्था होना आवश्यक है विश्वविद्यालय द्वारा इस परिपेक्ष्य में आवश्यक कार्यवाही की जानी चाहिये।

4. मण्डल ने विश्वविद्यालय के परिनियम 25 (2) (ए) के प्रावधानों के अनुसार अध्यापकों की योग्यता एवं शिक्षण अनुभव, जो विभिन्न महाविद्यालयों एवं विश्वविद्यालयों से इस कार्य हेतु प्राप्त हुए थे, की जांच करके 1979 की आयुर्वेद की विभिन्न परीक्षाओं के लिये परीक्षक तालिका (पेनल आफ एक्जामिनर्स) तैयार की।

5. मण्डल ने आयुर्वेद संकायान्तर्गत संचालित निम्नलिखित परीक्षाओं के पाठ्यक्रम एवं पाठ्यपुस्तकों के निर्धारण एवं तत्सम्बन्धित अध्यादेशों, नियम-उपनियमों में आवश्यक परिवर्तन, परिवर्धन संशोधन आदि विषय पर विस्तृत विचार कर निम्नलिखित संस्तुतियां की।

(अ) प्री-आयुर्वेद परीक्षा, 1981 :—

(i) भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली द्वारा निर्धारित प्री-आयुर्वेद के पाठ्यक्रम को आयुर्वेद संकाय ने अपनी निश्चय संख्या 3 दिनांक 24 अक्टूबर, 77 द्वारा एक समिति के विचारार्थ रखा था। समिति ने दिनांक 29 मई, 78 को सम्पन्न अपनी बैठक में उस पाठ्यक्रम को वर्ष 1979 की परीक्षा के लिये अक्षरक्षः लागू करने की संस्तुति की जिसे अकादमी परिषद ने अपनी निश्चय संख्या 33 दिनांक 22 जून, 1978 एवं सिण्डीकेट ने दिनांक 1-7-78 को स्वीकार किया तदुपरान्त विश्वविद्यालय ने उस पाठ्यक्रम को प्री-आयुर्वेद परीक्षा, 1979-1980 के लिये 1978 संस्करण में प्रकाशित किया। मण्डल ने इस पाठ्यक्रम का तथा इसमें अभी तक किये गये संशोधनों का अवलोकन कर 1981 की परीक्षा के लिए सिद्धान्ततः स्वीकार किया।

(ii) मण्डल ने आयुर्वेद संकाय की निश्चय संख्या 3 दिनांक 24 अक्टूबर 1977 द्वारा गठित समिति की दूसरी बैठक दिनांक 26 सितम्बर 1978 की संस्तुति संख्या 4 में प्री-आयुर्वेद विज्ञान विषय के पाठ्यक्रम के ज्ञेयांशों का निर्धारण करने हेतु तत्सम्बन्धित अध्यापकों की एक बैठक प्रस्तावित की इस बैठक द्वारा निर्धारित ज्ञेयांशों को मण्डल ने केवल 1979 की परीक्षा के लिये स्वीकार किया (परिशिष्ट सं० 1) इसी परिपेक्ष्य में मण्डल ने अध्यापकों की समिति की इस संस्तुति को अनुमोदित किया कि "यद्यपि प्री-आयुर्वेद परीक्षा का निर्धारित पाठ्यक्रम संस्कृत में है परन्तु महाविद्यालयों में इसका पठन पाठन अधिकांशतः हिन्दी में ही हुआ है अतः विश्वविद्यालय के अध्यादेश 329 एन-8 में कुलपति महोदय को विशेष स्वीकृति उक्त विन्दू को दृष्टिगत कराते हुए ली जावे, कि प्रश्नपत्र संस्कृत भाषा के साथ साथ सरल हिन्दी भाषा में भी बनाये जावें तथा तकनीकी शब्दों के आगे अंग्रेजी अनुरूप की विशेष सुविधा प्रदान की जावे।"

(ब) आयुर्वेदाचार्य (बैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी परीक्षा)

(1) प्रथम वर्ष आयुर्वेदाचार्य (बैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा, 1980 तथा 1981

- (2) द्वितीय वर्ष आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा, 1981 तथा 1982
  - (3) तृतीय वर्ष आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा, 1982 तथा 1983
  - (4) चतुर्थ वर्ष आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा, 1983 तथा 1984
  - (5) पंचम वर्ष आयुर्वेदाचार्य (वैचलर ऑफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा, 1984 तथा 1985
- (स) आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) प्रथम खण्ड परीक्षा, 1980
- (द) आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) द्वितीय खण्ड परीक्षा, 1981
- (i) मण्डल ने इस परिपेक्ष्य में गत बैठक दिनांक 29 अगस्त, 77 द्वारा आयुर्वेदाचार्य परीक्षा के लिये निर्धारित पाठ्यक्रम को निरस्त कर दिया एवं भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली द्वारा निर्धारित आयुर्वेदाचार्य (बी०ए० एम०एस०) पाठ्यक्रम को उपर्युक्त परीक्षाओं के लिये सिद्धान्ततः स्वीकार कर लिया।
  - (ii) मण्डल ने उपरोक्त समस्त पाठ्यक्रमों को सिद्धान्ततः स्वीकार करते हुए मत प्रकट किया कि भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली द्वारा निर्धारित उपरोक्त पाठ्यक्रमों की केवल दो साइक्लोस्टाइल प्रतियां ही मण्डल के समक्ष विचारार्थ प्रस्तुत की गईं। 15 सदस्यीय मण्डल में केवल दो प्रतियों से विचार विनमय, मन्यन, वाचन, मनन, विमर्श, निर्धारण आदि कार्य सम्पन्न होना संभव नहीं था फिर भी मण्डल द्वारा पाठ्यक्रम निर्धारण करने के लिये निम्नलिखित संस्तुतियां की गईं कि :—
- (क) ग्री-आयुर्वेद परीक्षा, 1981, आयुर्वेदाचार्य (बी ए. एम. एस.) परीक्षा 1981 तथा आयुर्वेद वाचस्पति परीक्षा 1981 के लिये भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली द्वारा निर्धारित पाठ्यक्रम की साइक्लोस्टाइल प्रतियां कराई जावें तथा उन्हें गत आयुर्वेद संकाय की निश्चय संख्या 3 (1) दिनांक 24 अक्टूबर 77, द्वारा गठित निम्नलिखित समिति (निम्न संशोधन के साथ) को ही विशेष रूप से विचारार्थ, शुद्धिकरण एवं उस पाठ्यक्रम



को इस प्रकार विभक्त कर निर्धारित करने हेतु प्रेषित किया जावे, कि पाठ्यक्रम को प्राच्य वैद्यक एवं आधुनिक विज्ञान को अव्यापक कुशलता पूर्वक छात्रों को समन्वयात्मक दृष्टिकोण से पढ़ा सकें तथा छात्र सुलभता से अध्ययन कर सकें। समिति को सिद्धान्ततः पाठ्यक्रम में परिवर्तन परिवर्धन करने का अधिकार नहीं होगा और समिति को इस प्रकार परिष्कृत उक्त ज्ञेयार्थों को सीधे ही आयुर्वेद सभा की आगामी बैठक में प्रस्तुत करने के लिये अधिकृत किया गया।

1. वैद्य प्रमुदत्त शास्त्री,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर।
2. वैद्य महन्त मुरली मनोहर शरण शास्त्री,  
अस्थल मन्दिर, सूरजपोल, उदयपुर।
3. वैद्य नरहरि शास्त्री,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर।
4. वैद्य शिवराम तिवाड़ी,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर।
5. वैद्य रंगनाथ शर्मा,  
राजकीय आयुर्वेद महाविद्यालय, उदयपुर।
6. वैद्य ब्रजमोहन वर्मा,  
राजकीय आयुर्वेद महाविद्यालय, सीकर।
7. वैद्य मदनलाल शर्मा (संयोजक मण्डल एवं समिति)  
राजकीय आयुर्वेद महाविद्यालय, उदयपुर।

(ख) उपरोक्त समस्त परीक्षाओं के पाठ्यक्रम हेतु पाठ्यपुस्तकों के निर्धारण के लिये श्री भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली के पत्र नं० 3-17/78/AY दिनांक 20.12.78 द्वारा प्रेषित आलोच्य ग्रन्थों की सूची पर विचार कर निर्धारण करने के लिये मण्डल ने उक्त समिति को अधिकृत किया।

6. सचिव भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली से प्राप्त पत्र क्रमांक 3-3-78/आयु (द्वितीय) दिनांक 30 जनवरी,

1979 (परिशिष्ट II) जिसके अन्तर्गत केन्द्रीय परिषद् द्वारा निर्धारित पाठ्यक्रम अविकल रूप से ग्रहण करने के लिये आग्रह किया है उसे मण्डल ने स्वीकार किया ।

7. कार्यालय की ओर से उपस्थित श्री रवीन्द्र भारती के सहयोग एवं संयोजक द्वारा बैठक के कुशल संचालन समापन के लिए उनके प्रति धन्यवाद के मत के साथ मण्डल की कार्यवाही विसर्जित की गई ।

बैद्य मदन लाल शर्मा

(संयोजक)

आयुर्वेद अध्ययन मण्डल

## परिशिष्ट-I

(सन्दर्भ मण्डल की निश्चय संख्या 5 (ii) दिनांक 26/27-3-79)

आयुर्वेद संकाय के निश्चय संख्या 3 दिनांक 24 अक्टूबर, 1977 द्वारा गठित समिति की संस्तुति संख्या 4 दिनांक 26 सितम्बर 1978 द्वारा संस्तुत प्री-आयुर्वेद परीक्षा, 1979 के विज्ञान विषय के पाठ्यांश में प्रायोगिक के ज्ञेयांश निर्धारित करने हेतु समस्त आयुर्वेद महाविद्यालयों के तत्सम्बन्धित अध्यापकों की बैठक दिनांक 19 मार्च, 1979 को विश्वविद्यालय कार्यालय, जयपुर में सम्पन्न हुई।

## उपस्थिति :

- |                           |          |
|---------------------------|----------|
| 1. श्री सेवकराम विरक्त    | (संयोजक) |
| 2. „ हरिप्रसाद शर्मा      |          |
| 3. „ ब्रजमोहन वर्मा       |          |
| 4. „ रामप्रसाद शर्मा      |          |
| 5. „ आर. पी. माथुर        |          |
| 6. „ आर. एस. भटनागर       |          |
| 7. „ गोविन्द नारायण शर्मा |          |
| 8. „ मोहनशंकर दशौरा       |          |
| 9. „ यशवन्त कोठारी        |          |

समिति ने संचालन हेतु श्री सेवक राम विरक्त को सर्वसम्पति से संयोजक नियुक्त किया।

समिति ने निम्नलिखित विषयों के पाठ्यांशों में प्रायोगिक के ज्ञेयांश निम्नलिखित परिशिष्टानुसार निर्धारित किये।

- (1) पदार्थ विज्ञानम् (उप परिशिष्ट “क”)
- (2) उद्भिज्जांग प्रत्यांग विज्ञानम् (उप परिशिष्ट “ख”)
- (3) रसशास्त्र परिचयः (उप परिशिष्ट “ग”)

समिति ने इस परिपेक्ष्य में यह संस्तुति की कि प्री-आयुर्वेद की परीक्षा 25 अप्रैल 1979 से प्रारम्भ है ऐसी परिस्थिति में उक्त ज्ञेयांशों को तत्काल अधिसूचित करना परमावश्यक है।

समिति ने यह भी संस्तुति की कि विश्वविद्यालय के अध्यादेश 329 एन-8 के प्रावधानान्तर्गत प्री-आयुर्वेद परीक्षा के प्रश्न पत्र संस्कृत भाषा के साथ सरल हिन्दी भाषा में बनाया जाना तथा तकनीकी शब्दों के अंग्रेजी अनुरूप भी मुद्रित करना छात्रों के हित में होगा क्योंकि इन विषयों का पठन पाठन हिन्दी में ही होता है ।

हं०  
सेवकराम विरक्त  
संयोजक

## उप परिशिष्ट (क)

प्री-आयुर्वेद प्रारम्भिक पदार्थ विज्ञान प्रायोगिक परीक्षा की स्कीम

पूर्णाङ्क 50

न्यूनतमोत्तीर्णाङ्क 25

1. प्रारम्भिक पदार्थ विज्ञान के क्रम संख्याएँ एक से पाँच तक निर्धारित प्रायोगिक जेयांशों के आधार पर प्रायोगिक परीक्षण— 20 अङ्क
2. विवरण पंजिका (प्रायोगिक जेयांशों के आधार पर किये गये प्रायोगिक कार्य का विवरण) 5 अङ्क
3. मौखिक (आयुर्वेदीय पदार्थ विज्ञान) 5 "
4. एक मेजर भौतिक विज्ञान का प्रयोग 10 "
5. एक नाइनर भौतिक विज्ञान का प्रयोग 5 "
7. रिकार्ड 5 "

प्री-आयुर्वेद प्रारम्भिक पदार्थ विज्ञान प्रायोगिक परीक्षा के जेयांश

1. पदार्थों का आयुर्वेद रीति से गुहृत्वादि गुणों के आधार पर पायिवादि परिचय

इसमें प्रत्येक दूत की प्रवानता वाले निम्नांकित तीन तीन द्रव्यों का परिचय अभीष्ट है :—

पायिद — हरीतकी, निशोध आमलतांच,

जलीय — आमलकी, द्राक्षा, अंजीर,

तेजस — सोंठ कालीमिर्च, पीपल

वायवीय — मदनफल, वचा, मुलहठी,

आकाशीय — गिलोय, एला, नागर मोया

2. निम्नांकित 5 सगन्ध द्रव्यों का परिचय

सुगन्ध द्रव्य — हींग, लहसुन, कपूर, तेजपात, दालचीनी,

3. मबुरादि प्रत्येक रसयुक्त तीन तीन द्रव्यों का परिचय

4. त्यन्दन के कारण द्रवत्वं और पतन के कारण गुहृत्वं का प्रायोगिक ज्ञान

5. संस्कार अर्थात् गुणान्तरावान का परिचय

पदार्थ विज्ञान (भौतिक विज्ञान) का प्रायोगिक कार्य का प्रारूप :—

निम्नलिखित प्रायोगिक कार्य कराये जाने चाहिये :—

1. वॉनियर कैलीपर से लम्बाई, क्षेत्रफल व आयतन का मापना ।
2. सूक्ष्म पेंचमापी से तार का व्यास ज्ञात करना ।
3. भौतिक तुला से ठोस पदार्थ का आपेक्षिक घनत्व ज्ञात करना ।
4. भौतिक तुला से द्रव पदार्थ का आपेक्षिक घनत्व ज्ञात करना ।
5. द्रव्य घनत्वमापी द्वारा ठोस का आपेक्षिक घनत्व ज्ञात करना ।
6. द्रवणांक
7. क्वथनांक
8. प्रकाश के परावर्तन के नियम का सत्यापन ।
9. अवतल दर्पण की फोकस दूरी का मापन ।
10. वर्तन के नियमों का सत्यापन ।

#### उप परिशिष्ट "ख"

1. प्रायोगिक प्रश्न पत्र का समय चार घन्टे का होना चाहिए ।
2. प्रायोगिक प्रश्न पत्र का आधार निम्न प्रारूप के अनुरूप निर्धारित किया जाये ।
3. बहिरंग एवं आन्तरिक परीक्षक आधुनिक विज्ञान विषय का ही बनाया जाना विज्ञान के हित में होगा । प्रायोगिक विषय क्षेत्र अधिकतर आधुनिक विज्ञान का होने से यह सन्तुष्टि दृष्टिगत नितान्त आवश्यक है ।
4. प्रायोगिक परीक्षाएँ सैद्धान्तिक से पूर्व ही सम्पादित करवाई जाना छात्रों के हित में समुचित रहेगा । साधारणतौर पर सैद्धान्तिक परीक्षा के बाद प्रायोगिक पदार्थ यथा पुष्प आदि की उपलब्धि वातावरणीय कारणों से दुर्लभ हो जाती है ।

उद्दिष्टज्जांग प्रत्यांग विज्ञानम

पूर्णाङ्क 50 अंक

न्यूनतमोत्तीर्णाङ्क 25 अंक

प्रायोगिक परीक्षा पाठ्यक्रम

1. निम्न पुष्पवाहक के पौधों के शरीर के विभिन्न भागों का वर्णन तथा पठित वर्गों के पौधों की पहिचान तथा उनके वर्गों का निश्चय :—  
15 अंक
1. राजिकादि वर्ग : (Family Guciferae)

2. कापीसादि वर्ग : (Family Malvaceae)

3. अहिफेनादि वर्ग : (Family Papavaceae)

4. सिम्बी वर्ग : (Family Legumiuoseae)

(अ) अपराजितादि वर्ग : (Sub family Papilisnaceae)

(व) पूतिकरंजादि वर्ग : (Sub family Caesarl  
pirviodcae)

(स) वव्वूलादि वर्ग : (Sub family Mimosoideae)

5. कण्टकार्यादि वर्ग : (Family Solanaceae)

6. भृंगराजादि वर्ग : (Family Compositae)

7. अरुण्डादि वर्ग : (Family Eupuorbiaceae)

8. मण्डूकपर्ण्यादि वर्ग : (Family Umbellifereae)

9. निम्बूकादि वर्ग : (Family Rutaceae)

10. रसोनादि वर्ग : (Family Leliocae)

2. वानस्पतिक अणुवीक्षणीय परीक्षण हेतु आरोपण (Mounting)  
(छात्र के सामान्य ज्ञान की परीक्षा हेतु) 5 अंक

3. पाठ्यकार्य की एवं पाठ्यशारीरिकी के निम्न विषय क्षेत्रों से  
सामान्य एवं प्रयोगों का तीन मिनट के समय में टिप्पणी करवाना :— 10 अंक

1. पाठ्य शरीर क्रिया विज्ञान	1 प्रयोग संख्या
2. पाठ्य रूपान्तर	2 „
3. पाठ्य शरीर रचना	1 „
4. अन्य कोई	1 „

कुल 5

4. सैद्धान्तिक पाठ्यक्रम में वर्णित वर्गगत औषधीय गुण वाले  
वानस्पतिक पदार्थों की पहचान एवं गुण कोई पांच 10 अंक

5. विवरण पंजिका 5 अंक

6. मौखिक परीक्षण 5 अंक

## उप-परिशिष्ट (ग)

## प्रारम्भिक रसशास्त्र परिचय

समय 3 घंटे

पूर्णाङ्क 50

न्यूनतमोत्तीर्णाङ्क 25

1. एक भेजर प्रयोग रसशास्त्र	10
2. एक माइनर प्रयोग रसशास्त्र	5
3. एक भेजर प्रयोग रसायनशास्त्र	10
4. एक माइनर प्रयोग रसायनशास्त्र	5
5. वाइवा चोस	रस+रसायन 5 + 5 10
6. प्रायोगिक पंजिका	5 + 5 10

50

## आयुर्वेदीय रसशास्त्र परिचय

परिचय :

( I ) महारस एवं उपरसना परिचय :—

- (1) पारद (2) हिगुल (3) गंधक (4) हरिताल (5) मंशिला  
 (6) शिलाजतु (7) गोरिक (8) टंकरा (9) नरसार (10) अंजन  
 (11) स्याठिका (12) तरुय (13) कासीत (14) माक्षिका  
 (15) अभ्रक (16) स्वर्ण (17) रजत (18) ताम्र (19) लौह  
 (20) नाग (21) वंग (22) यरुद (23) मंहर (24) मुक्ता  
 (25) प्रवाल (26) बुक्ति (27) शंख (28) कपद (29) शृक्त  
 (30) गोदंती (31) माणिक (32) वैदूर्य (33) पुष्पराग (34) गोमेद  
 (35) माणिक्य (36) नीलम (37) हीरक (38) फेनाश्म  
 (39) वत्सनाभ (40) विषमुष्टि (41) जयपाल (42) भल्लतक ।

( II ) पंचविध कपाय कल्पना परिचय :—

(क) स्वरस (ख) कल्क (ग) क्वाथ (घ) हिम (ङ) फान्

( III ) मानभेद परिचय :—

(अ) मागधमान (आ) कर्लिगमान (ई) दासमलिकमान

रस शास्त्र परिचय प्रायोगिक कार्य का प्रारूप :—

निम्नांकित प्रायोगिक कार्य कराये जायें :—

1. मिश्रण के अवयवों को पृथक-पृथक करना ।



2. तीन मुख्य अम्लों की पहचान ।  
(गन्धकाम्बल, लवणाम्बल, व शोरे का अम्ल)
- 3 अम्ल, क्षार व लवण में भेद ।
4. प्रयोगशाला में निम्नांकित गैसों का निर्माण एवं उनके गुणों का परीक्षण
  - (1) हाइड्रोजन
  - (2) आक्सीजन
  - (3) नाइट्रोजन
  - (4) कार्बन डाई आक्साइड
5. आम्लीय व भास्मीक मूलकों की पहचान  
आम्लीय मूलक—कार्बोनेट, क्लोराइड, ब्रोमाइड, नाइट्रेट व सल्फेट ।  
भास्मीक मूलक—लैंड, मरक्यूरस, मरक्युरीक सोडियम, पोटेशियम, मैग्नीशियम, अमोनियम, एन्टीमनी, कोबाल्ट ।

## परिशिष्ट II

संदर्भ मण्डल की निश्चय संख्या 6 दिनांक 26 एवं मार्च, 1979

तार :

दूरभाष : सचिव : 52862

कार्यालय : 522772

निवास स्थान : गुडगांव : 2 5 1 4

## भारतीय चिकित्सा केन्द्रीय परिषद्

समस्त पत्र व्यवहार रजिस्ट्रार एवं  
सचिव को सम्बोधित कीजिये।

। ई-6, स्वामी रामतीर्थ नगर

(भण्डेवालान प्रसार)

नई दिल्ली-110055

क्रमांक 3-3/78-आयु. (द्वितीय)

दिनांक : 3 जनवरी, 1978

सेवामें,

कुलसचिव,

राजस्थान विश्वविद्यालय,

जयपुर (राज०)

विषय : भारतीय चिकित्सा केन्द्रीय परिषद् द्वारा निर्धारित  
आयुर्वेदाचार्य पाठ्यक्रम को लागू करना।

महोदय,

उपयुक्त विषय में आपके पत्र संख्या 13 (8) एके. (रजि.)/78/2880 एम. दिनांक 3.1.79 के सन्दर्भ में निवेदन है कि आपके द्वारा प्रेषित प्राग आयुर्वेद पाठ्यक्रम विवरण सम्बन्धी नियमावली प्राप्त हुई। पुनः आपसे अनुरोध है कि केन्द्रीय परिषद् द्वारा निर्धारित पाठ्यक्रम का अविकल रूप से अनुसरण किया जाय।

भवदीय

हस्ताक्षर

(सतीशचन्द्र शर्मा)

निबन्धक एवं सचिव

MINUTES OF THE SPECIAL MEETING OF THE BOARD  
OF STUDIES IN PHYSICS HELD ON THE 29TH  
JUNE, 1979 AT 10.30 A.M. IN THE UNIVER-  
SITY OFFICE, JAIPUR.

Present :

1. Shri M. K. Bhargava (*Convener*)
2. Shri B. N. Roy
3. Shri H.B. Saxena
4. Shri S. R. Sharma (*Special Invitee*)

N.B. :—The minutes were also circulated to the other members of the Board and did not make any comments.

1. With reference to Academic Council Res. No. 16 dated 15-5-1979 and the Syndicate Res. No. 2 (iii), dated 26/27 May, 1979 the Board recommended the courses of Study for the M.Sc. Physics (Annual Scheme) examinations of Prev. 1980 and Final Examinations of 1981 according to the Annual Scheme of examination (*Vide Appendix I*)

2. The Board, however, desired that the courses of Study for the M.Sc. previous Examination of 1981 and Final examination of 1982 be re-considered by the Board at its next meeting. The Board considered letter No. CF12/PHY/79/1203 dated 23rd June, 1979 received from Dr. M.P. Saxena, University Head of the Department of Physics regarding Project work assigned to M.Sc. Final Students. In this connection Board also observed that the Scheme of project work assigned to M.Sc. Final students has not proved to be successful in its present form and in order to make it more useful the Board resolved that the experimental project work be made optional only for the candidates appearing at the III/IVth Semester Examinations of 1980 and M.Sc. Final Examination of 1981.

A candidate offering experimental project will either perform any eight experiments alongwith a project experiment or 14 experiments.

The distribution of marks will be as follows :—

Max. Marks	200 Marks	
Record	40 Marks	
Viva-Voce	40 Marks	
Two experiments	60 Marks each	} 120 marks
or		
One experiment and one project.		

3. With reference to the Academic Council Res. No. 10 dated 1st June, 1979 and the Syndicate Res. No. 3 dated 16th June, 1979, the Board re-arranged the Syllabi of the Under-Graduate and Post-Graduate Examinations in the subject and accordingly 1979 editions of the Syllabi prescribed for the various examinations of 1981 in the above subject be got printed.

4. With reference to the Academic Council Res. No. 4 (ii) dated 15-5-79 regarding Hindi translation of courses in Hind. The Board felt that all the members of B.O.S. are already pre-occupied with other examination work and it was not possible to continue the meeting of the B.O.S. for the purpose.

*Resolved that* 1979 edition of the Syllabus be got printed in English version only in view of the aforesaid decision of the Academic Council.

5. Shri H.B. Saxena, member of the Board, pointed out in the meeting itself that in assessment of P.M.T. Examination Scripts a few discrepancies are left and, therefore, the Board *resolved to recommend* that (i) System of double evaluation be introduced at the P.M.T. Examination immediately and (ii) each examiner be allotted lesser number of answer books to each examination of the P.M.T. examination Scripts.

The meeting ended with a vote of thanks to the Chair.

M. K. Bhargava  
( Convener )

## M.Sc. ( Previous ) Examination, SCHEME OF EXAMINATION

- Paper I Classical Mechanics and Mathematical Physics.  
Max. marks 100 3 hours duration
- Paper II Classical Electro dynamics.  
Max. Marks 100 3 hours duration
- Paper III Quantum Mechanics and Spectroscopy.  
Max. Marks 100 3 hours duration
- Paper IV Statistical Mechanics and Electronics.  
Max. Marks 100 3 hours duration

*Note :—Five questions are to be attempted in each papers.*

### SYLLABUS

Paper—Classical Mechanics and Mathematical Physics  
*Max. Marks 100 3 hours duration*

#### 1. Elements of Tensors :

Curvilinear orthogonal co-ordinate system : Cartesian, cylindrical, spherical and ellipsoidal, Expression for grad, div and curl in curvilinear orthogonal co-ordinates. Contravariant and axial vectors, Covariant, contravariant and mixed tensors and their transformations, Contraction of a tensor. Definition of a metric tensor and its use in the transformation of tensors.

#### 2. Mechanics of System of Particles :

The equation of motion, holonomic and nonholonomic constraints. Generalised coordinates, D'Alembert's principle and Lagrangian equations of motion and its applications to simple physical problems. Lagrangian equations for velocity dependent potentials and non-conservative forces, Method of Lagrangian multipliers for holonomic systems.

#### 3. Action Principle :

Calculus of variation, action principle in Lagrangian formulation, action principle in Hamiltonian formulation, extension of Lagrangian and Hamiltonian for a charged particle.

#### 4. Hamilton's Equation of Motion :

Legendre transformation, Hamilton's equation of motion for a conservative system as well as non-conservative system. Poisson bracket and equation of motion, Jacobi identity and Poisson's theorem. The virial theorem. Routh formulation of the equations of motion. Canonical transformation and its application to linear harmonic oscillator.

## 5. Classical Field Theory :

The variation principle and Euler-Lagrange equation. Lagrangian density (i) for a scalar field examples—vibration of a string and sound propagation in gases (ii) for a vector field, example—the electromagnetic field and derivation of Maxwell's equations.

## 6. Differential Equations :

The linear differential equation with variable coefficients, singular points of the differential equation. The series solutions, solutions relative to a singular point, the hypergeometric equation and solution, the Legendre equation and its solution. The Bessel equation and its solution, Spherical Bessel and Neuman's functions, Legendre and Associated Legendre equations and polynomials. Hermite equation and polynomials, Laguerre and associated Laguerre equation and polynomials. Recurrence relations and orthogonality properties of Legendre, Associated Legendre, Hermite, Laguerre, associated Laguerre polynomials and Bessel functions.

## 7. Wave equation and Laplace's equation :

The solution of Wave equation in cartesian, cylindrical and polar coordinates. The solution of Laplace's equation in cartesian, cylindrical, and spherical co-ordinates with the following applications : (i) rectangular coordinates—Line charge, between two earthed parallel plates; (ii) cylindrical co-ordinates—point charge in a grounded conducting cylinder; (iii) spherical co-ordinates—point charge and dielectric sphere in uniform electric field.

## 8. Fourier and Laplace Transforms :

Fourier's integral, Fourier transform and inversion theorem. Faltung theorem, Application of Fourier transform to pulse propagation.

Laplace transform and its application to simple oscillatory circuits.

Dirac Delta Function—its derivative and important Properties.

## 9. Complex Variables and Integration of Functions of Complex Variables :

Analytic functions, Cauchy—Riemann conditions, Line integral of complex function, Cauchy integral theorem and Cauchy integral formula, interconnection between real and imaginary parts of an analytic function, singular points of an analytic function. Taylor's and Laurent's series, Residue and Cauchy's residue

theorem. Evaluation of definite integrals. Jordan's Lemma, multi-value functions, branch points and branch cuts, Riemann surfaces, integrals involving branch points.

## Paper II · Classical Electrodynamics :

3 hrs. duration

100 marks

### 1. Electrostatics :

Microscopic Maxwell's equations, Derivation of Macroscopic equations.  $\text{div } \mathbf{D} = \rho$ ,  $\text{curl } \mathbf{E} = 0$ . Formal solution, electrostatic potential due to a finite distribution of charges. Multipoles. Expansion of potential in terms of multipole moment in Cartesian and spherical coordinates and relations for first and second order moments, Multipole expansion of the energy of a charge distribution in an external field. Dielectric permeability of a mixture. Coefficients of capacitance and induction: application to two distant electrodes.

### 2. Boundary value problems :

Boundary conditions. Uniqueness theorem. Thomson's Theorem, Greens reciprocation theorem.

Electrical images : point charge and a conducting or a dielectric plane; point charge and conducting or dielectric sphere.

Green's function : Formal solution of electrostatic boundary problem with Green's function. Green's function for a plane and a sphere, conducting hemispheres with different potentials.

### 3. Magnetostatics, magneto fluid dynamics and plasma physics :

Macroscopic Maxwell's equations for magnetostatics, Vector potential and field due to a circular current loop, Magnetic shielding due to permeable shells in a uniform magnetic field.

The equation of motion of a fluid in a magnetic field. Magnetic pressures. Pinch effect, Qualitative ideas of instabilities in a pinched plasma column. Magnetohydrodynamic waves. High frequency plasma oscillations.

### 4. Electromagnetic Waves :

Macroscopic Maxwell's equations, Conservation laws for charged particles in electromagnetic fields. Poynting vector. Reflection and refraction of plane electromagnetic waves at a surface of a dielectric. Polarisation by reflection. Total internal reflection. Waves in a conducting medium. Reflection at a conducting plane surface.

## 5. Relativistic Kinematics and Dynamics.

Homogeneous and inhomogeneous Lorentz transformations. Four vector formulation and examples of four vectors. Transformation of four frequency vector : Transverse and longitudinal, Doppler effect, Lorentz transformation and rotation in space-time. Invariance of space-time interval, Time like and space-like vectors (using light cone description). Ideas regarding macro-causality.

6. Proper time, Relativistic equation of motion. Invariance of rest mass and its relation to the orthogonality of four force and four velocity. Lorentz force as an example of four force. Four momentum conservation of colliding particles. Transformations between laboratory and centre of mass systems. Inelastic collision of two particles, Collision of a photon with a free electron (Compton Effect).

## 7. Relativistic electro-dynamics :

Definition of the electromagnetic field tensor. Transformation of four potentials, four-currents, electric and magnetic fields between two inertial frames of reference. Invariants of electromagnetic fields. Equation of continuity and conservation of charge. Tensor description (covariant formulation) of Maxwell's equations; Maxwell's equations in vacuum and in material medium, Gauge transformation of second kind. Lorentz radiation and Coulomb gauge. The energy momentum tensor of Maxwell field and its conservation.

The relativistic equation of an electron in the external electromagnetic field. Consideration of radiation reaction and Lorentz-Dirac equation of motion.

## 8. Radiation by moving charges :

Lienard—Wiechert potentials and field of a point charge, Total power radiated by an accelerated charge, Larmor's formula and relativistic generalization. Frequency spectrum and angular distribution of radiation emitted by a charge having its acceleration along and perpendicular to the velocity. Cherenkov radiation, Energy radiated per unit frequency interval per unit path in Cherenkov radiation.

Field and radiation of a localised oscillating source, Electric dipole field and radiation.

## 9. Scattering and dispersion :

Radiative damping of a charged harmonic oscillator—Line width and level shift of an oscillator. Scattering by a free and a bound electron. Thomson and Rayleigh scattering formula.



Absorption of radiation by an oscillator. Equilibrium between an oscillator and a radiation field. Effect of volume distribution of scatterers. The dispersion relation Kramers-Kronig formula. General relation between total cross section and absorption. The optical theorem.

### Paper III Quantum Mechanics with Application to Spectroscopy

3 hrs. duration

100 marks

#### Section—A

#### 1. Experimental foundations of Quantum Mechanics :

Matter waves, de-Broglie relation. Principle of superposition. Wave packets, uncertainty relations. Motion of a wave-packet. Uncertainty relation and spreading of wave-packet.

#### 2. Schrodinger wave function :

Justification of a wave equation, Schrodinger's equation in one and three dimensions, statistical interpretation of wave function and conservation of probability. Normalization of wave function. The operator concept. Expectation values of dynamical variables and operators. Schrodinger's equation for a charged particle in an electromagnetic field. General rules for forming the Schrodinger's equation by correspondence principle. Stationary state solution and general solution of the wave equation.

#### 3. One dimensional motion through constant potentials :

Reflection and transmission of waves. Infinitely high potential barrier. Infinitely deep squarewell potential. Discrete spectrum. Finite squarewell, resonances. Penetration of a rectangular potential barrier—the tunnel effect.

#### The linear harmonic oscillator :

Energy Eigenvalues and Eigenfunctions, parity, zero point energy. Motion of wave packets.

4. Central force—Solutions of Schrodinger's Equation in spherical polar co-ordinates. Separation of variables and orbital angular momentum. Solution of the radial equation for Coulombian potential. Energy levels and eigen functions. Degeneracy and quantum numbers. Quantum numbers for many electron system. Pauli's exclusion principle.

## 5. The spin and identical particles :

- (i) The intrinsic angular momentum polarization of waves. Spin as a dynamical variable. Spin theory in matrix form. Equation of motion for an electron with spin ( Pauli - Darwin equation ). Measurements and probability.
- (ii) Physical meaning of identity. Symmetric and antisymmetric wave functions. Construction from unsymmetrised functions, symmetrization postulate, Pauli's principle and connection with statistical mechanics.

## *Section—B*

6. Approximation methods for stationary problems :  
Stationary perturbation theory—non-degenerate case, first order perturbation, second order perturbation. Degenerate case, removal of degeneracy in first and second order. Stark effect of  $H_2$  lines using perturbation theory.
7. Variation method :  
Expectation value of energy. Application to excited-states. Ground state of Helium. Electron interaction energy. Exchange degeneracy. Heitler-London theory of Hydrogen molecule.
8. Spin-Orbit interaction and fine structure :  
Zeeman effect, explanation of Zeeman effect of sodium lines using perturbation theory. Spectra of one and two valence electron systems : General features, singlet, doublet and triplet character of emission spectra.
9. Molecular Spectra :  
Rigid rotator-eigen values, eigen functions and energy spectrum. Anharmonic oscillator using perturbation theory. Rotational and vibrational band spectra, Frank—Condon principle. Qualitative discussion of electronic band spectra.
10. Raman spectra for the rotational and vibrational state transitions. WKB method and its applications. Radiation correction—Lamb shift. Qualitative discussion of hyperfine structure.

**Paper IV—Statistical Mechanics and Electronics**

3 hrs. duration

100 marks.

*Section—A***1. Fundamental Principles :**

Idea of statistical distribution, Phase space, Density of states, Liouville's theorem, Systems and Ensembles, Entropy in statistical mechanics, connection between statistical and thermodynamic quantities, Microcanonical ensemble. Equation of state, specific heat and entropy of a perfect gas using microcanonical ensemble.

**2. Canonical and Grand Canonical Ensembles :**

Canonical ensemble. Thermodynamic functions for the canonical ensemble. calculation of mean values, Energy fluctuations in a gas, Grand canonical ensemble. Thermodynamic functions for the grand canonical ensemble, Density fluctuations.

**3. Partition Functions :**

Partition functions and properties, Partition function for the ideal gas and calculation of thermodynamic quantities, Gibbs paradox, validity of classical approximation, Determination of translational, rotational and vibrational contributions to the partition function of an ideal diatomic gas, Specific heat of a diatomic gas, Ortho and para hydrogen. Theory of paramagnetism.

**4. Quantum Statistics of Ideal Gases :**

Identical particles and symmetry requirements, Difficulties with the Maxwell-Boltzmann statistics, Quantum distribution functions : Bose-Einstein and Fermi-Dirac, Bosons, Photon statistics and Planck's formula, Bose-Einstein Condensation, Liquid He<sup>4</sup> as a Bose system Fermions, Electronic specific heat in metals.

*Section—B***5. Linear Small Signal Amplifiers :**

RC coupled CE—amplifier and its response in different frequency ranges, Extension of band width in low and high frequency regions, Transistor singly-tuned amplifiers Cathode follower Noise in amplifiers,

**6. Power amplifiers with large signals :**

Operating classifications, class A, B and C amplifiers and their relative efficiency, class A tube and transistor push-pull amplifiers.

**Feed-back :**

Feed-back in amplifiers, Negative feed back and gain stability, effect of feed back on output and input impedances, frequency response and non-linear distortion. Current and voltage feed back circuits.

**Direct Coupled Amplifiers :**

Chopper amplifiers, Differential amplifiers, operational amplifiers, voltage regulation using DC amplifiers.

**7. Wave shaping circuits :**

Exponential circuit response, Differentiation and Integration by RC and RL circuits, Clipping or limiting circuits, clamping circuits.

General features of a time base signal, Thyatron sweep circuits, Deviation from linearity in RC sweeps, circuits to improve linearity, Miller sweep and Bootstrap sweep.

**8. Multivibrators and Blocking oscillators :**

Astable, Monostable and Bistable multivibrator circuits, Frequency of astable vibrator, Frequency control, Synchronisation; Triggering of Binary circuits. Blocking oscillator, Period, Pulse width, Pulse amplitude and rise time of a blocking oscillator,

**9. Logic Circuits :**

Boolean Algebra, Binary counting, counting to a base other than 2, binary counter, Decade counter. Transmission and logical gates, OR, AND, NOT and NOR circuits.

***Suggested readings :***

- |                     |  |
|---------------------|--|
| 1. Reif             | —Fundamentals of statistical and Thermal Physics, International Student Edition (McGraw-Hill, Ko-gakusha). |
| 2. Kittel           | —Elementary Statistical Physics (John Wiley & Sons).   |
| 3. Huang            | —Statistical Mechanics (Wiley Eastern Univ. Edition)   |
| 4. Ryder            | —Electronic Fundamentals and Applications (Prentice-Hall of India).  |
| 5. Millman and Taub | —Pulse and Digital Circuits (Mc Graw Hill).  |

## 6. Reich. Skalnik and Krauss —Theory and Applications of active Devices (East-West).

## Practicals :

There will be two experiments 6 hrs. duration each day.

The distribution of marks will be as follow :—

2 Expts—120 (60 each)

Viva—20%

40

Record—40

Any 16 experiments out of the following :—

1. Temperature of Flame.
2. Curie temperature.
3.  $e/m$  by helical method.
4. Fresnel's Laws.
5. Planck's constant by solar cell.
6. Characteristics of solid state diodes.
7. Characteristics of transistors.
8. Design of R.C. Coupled amplifier using tubes.
9. Design of R.C. Coupled amplifier using transistors.
10. Design and study of Oscillators.
11. Design of a rectifier and study of its characteristics.
12. Study of filter circuits.
13. Fourier Analysis.
14. Receiver characteristics.
15. Inductance, capacitance and resistance of a coil at radio-frequencies.
16. Study of series and parallel resonance circuits.
17.  $e/m$  by Zeeman effect.
18. Study of absorption spectra
19. Raman Spectra.
20. Verification of Hartmann's Formula.

## M.Sc. (Final) Examination

## Scheme :

Paper V—Advanced Quantum Mechanics.

3 hrs. duration

—100 marks

Paper VI—Nuclear Physics.

3 hrs. duration

—100 marks

Paper VII—Solid State Physics.

3 hrs. duration

—100 marks.

Paper VIII—

(a) Spectra of Diatomic Molecules

3 hrs. duration

—100 marks.

(b) Micro Wave and Radio Frequency Spectroscopy.

3 hrs. duration

—100 marks.

- (c) Micro Wave Electronics  
3 hrs. duration —100 marks.
- (d) General Theory of Relativity and Geomaty.  
3 hrs. duration —100 marks.
- (e) Particle Physics  
3 hrs. duration —100 marks.
- (f) Plasma Physics :—Theory and Applications.  
3 hrs. duration —100 marks.
- (g) Television Electronics—1  
3 hrs. duration —100 marks.

### SYLLABUS

#### Paper V—Advanced quantum mechanics

3 hrs. —100 marks.

#### 1 Scattering :

Scattering cross-section, scattering of a wave packet, Green's function in scattering theory. Born approximation and its validity for scattering from a square well. Partial waves and phase shifts. Determination of phase shifts and scattering resonances. Phase shifts and Green's functions Scattering in a Coulomb field.

#### 2. Mathematical formulation of Quantum Mechanics :

Postulates of quantum mechanics and their discussion, Principle of superposition, Principle of uncertainty. Bra-and ket vectors, Linear operators and their conjugates. Eigenvalues and Eigenvectors. Observables and their functions, Commutability and compatibility.

3. Basis vectors and their properties, representation of linear operators. probability amplitudes and unitary transformations, connection with wave formulation, Schrodinger picture and Heisenberg picture, forms of equations of motion, Interaction (Dirac) picture.

#### 4. Time Dependent Perturbation Theory :

Expansion in terms of unperturbed eigen functions. First order perturbation. Physical interpretation. Transition probability, Harmonic perturbation. Second order perturbation, Effect of first order transitions.

#### 5. Absorption and Induced Emission :

Atom in the radiation field of plane electromagnetic waves. Transition probability for absorption and induced emission.

Electric dipole transition, forbidden transitions. Einstein coefficients.

### Relativistic Equations :

#### 6. Klein Gordon Equations :

Klein Gordon Equation of free particle and its solution. Klein Gordon Equation with electromagnetic potentials and its solution, the probability current density with and without e.m. potentials Momentum representation of the free particle K.G. Equation.

#### 7. Dirac Equation :

Dirac Equation for a free particle, properties of Dirac matrices and their four-dimensional representation, Free particle solutions of Dirac equation, negative energy states. Dirac equation for central fields, spin angular momentum—Magnetic moment of the electron, concept of helicity, spin orbit coupling, energy states of H—atom Relativistic invariance of Dirac Equation. Dirac Equation in the presence of electromagnetic fields and charge conjugation invariance.

#### 8. Symmetries in Quantum Mechanics :

Invariant observable, symmetry of the Hamiltonian, space translation and conservation of linear momentum, time translation and conservation of energy, space rotation and conservation of angular momentum. Generators of an infinitesimal rotation and their commutation relations, angular momentum operator for a scalar and a vector field, idea of spin. The eigenvalue problem of the angular momentum operator, explicit matrices for  $J^2$ ,  $J_z$ ,  $J_y$  and  $J_x$  (when  $J^2$  and  $J_z$  are diagonal.)

#### 9. Combination of two angular momenta :

Clebsch Gordon coefficients and their orthogonality and recurrence relations, Evaluation of C.G. Coefficients for the case of  $j_1 = \frac{1}{2}$ ,  $j_2 = \frac{1}{2}$  and  $j_1 = \frac{1}{2}$ ,  $j_2 = 1$ . Wigner-Eckart theorem and its application in obtaining the static moments and selection rules for e.m. transitions. Space inversion (parity) and its eigenvalues, time reversal as antiunitary operator, charge conjugation. (Only simple applications are to be used for illustration of P.T.C.)

#### 10. Elementary Particle Physics (*only information discussion*) :

Definition of the quantum numbers, specifying the state of particles namely, mass, spin, isospin, strangeness, Baryon number, intrinsic parity, hypercharge etc, and general classification of particles, as photons, leptons and hadrons (mesons and baryons) (An approximate table of particle classification may be given). conservation laws and selection rules for production of particles.

## Paper VI—Nuclear Physics

3 hrs. duration

100 marks.

## 1. Elements of Nuclear Structure and Systematics :

Constituents, mass, charge, size and their determination from Rutherford scattering and electron scattering. Spin, magnetic moment and their experimental determination. The Schmidt model. Electric quadrupole moment, experimental determination.

Binding energy, the semi-empirical mass formula.

## 2. Nuclear forces and the Two Body Problem :

The deuteron, its properties and analysis under central forces,  $n-p$  scattering below 10 MeV; spin dependence, effective range approximation: coherent and incoherent scattering.  $p-p$  scattering below 10 MeV; effect of exclusion principle. Charge independence of  $n-p$  and  $p-p$  forces. Tensor forces to explain quadrupole and magnetic moment of the deuteron. Exchange forces, formal definitions, their effects on nucleon forces.

## 3. Nuclear Shell Model and Elements of Collective Model :

The single particle shell model and discussion of results on magic numbers, spin and magnetic moment, isomerism. The collective model, rotation and vibration states.

## 4. Nuclear Transformations :

General theory of  $\alpha$ -decay, decay, discussion of experimental data.  $\beta$  decay :  $\beta$  energy spectrum. Fermi's theory of  $\beta$  decay, properties of neutrino. Forms of  $\beta$  transition, parity conserving and nonconserving forms. Experimental verification of parity violation. The V-A interaction and experimental evidence. Coulomb effects, allowed and forbidden transitions, spectrum shapes and life-times, transition matrix elements.

## 5. Electromagnetic transitions :

Angular distribution of multipole radiation, selection rules and transition probabilities (no derivation). Internal Conversion. Coulomb excitation.

## 6. Nuclear Reactions :

Scattering and reaction cross section. The compound nucleus model, resonance, the Breit Wigner formula ( $l=0$  only); continuum theory of Cross section.

## 7. Direct reactions :

Kinematics of stripping and pick up reactions, elementary discussion of determination of spin and parity of scattering nucleus



Vibrations of linear mono and diatomic lattices. Acoustic and optical modes. Reststrahlen frequency.

- (b) Phonons : Quantisation of Simple Harmonic Oscillator, creation and annihilation operators Coupled oscillators (linear chain). Conservation of energy and momentum Inelastic scattering of phonons by photons and Neutrons.

### 3. Thermal Properties of Solids :

- (a) Lattice Heat Capacity : Einstein Model, Debye Model, Van Hove singularities.
- (b) Anharmonic Crystal interaction : Equation of state of solid, Gruneisen relation thermal expansion. Thermal conductivity, Umklapp processes.

### 4. Optical Properties of Solids :

- (a) Complex refractive index, dispersions and absorption. Atomic polarisability Lorentz correction. Drude Theory of absorption of light in metals.
- (b) Excitons, photoconductivity, traps.
- (c) Lattice vacancies, statistics of Schottky and Frenkel defects in mon-atomic crystal, colour centres.

### 5. Free Electron Theory :

Heat Capacity of metals. Boltzmann Transport equation, electrical conductivity, relaxation time and scattering processes, Thermal conductivity of metals. Winemann Franz law. Hall Effect.

### 6. Band Theory of Solids :

Bloch Functions, Kronig-Penny Model, Effective mass of electron, Metals, semi-conductors and insulators. Intrinsic conductivity of semi conductors, the law of mass action in semi conductors intrinsic carrier concentration, ionization energy of impurity centres.

### 7. One Electron Models :

- (i) Calculation of cohesive energy of metal using Wigner Seitz Approximation, Application of Free Electron and Tight binding approximation to the energy band calculations in cubic crystals.
- (ii) Formulation ( No. Applications ) of Augmented Plane Wave ( APW ) method. Orthogonalised Plane Wave (OPW) method. Psuedo Potentials, Hartee Fock Equation.

## 8. The Fermi Surface :

- (ii) Constant energy surfaces in two dimensional square lattice and simple cubic lattice, calculation of density of states for the simple cubic lattice in tight binding approximation (for s-band only).
- (iii) Anomalous skin effect, magneto-resistance, cyclotron resonance, Ellipsoidal energy surface in Si and Ge.

## 9. Magnetic Properties of Solids :

- (a) Langevin Theory of diamagnetism and Paramagnetism, Quantum theory of paramagnetism, susceptibility of rare earth and transition metal ions, spin paramagnetism, diamagnetism of free electrons.
- (b) Ferro-Magnetism : Curie Weiss law, domains, Bloch's wall, Heisenberg theory, spin waves in linear lattice magnons, Derivation of Bloch  $T^{3/2}$  Law.
- (c) Antiferro-magnetism (two sub-lattice model). Ferrimagnetism.
- (d) Introductory Nuclear Magnetic resonance, Bloch's equation.

## 10. Super-conductivity :

- (a) Experimental Results : Meissner Effect, Heat capacity, micro-wave and infrared properties, isotope effect, electron tunneling, Josephson effect.
- (b) Theory of Super-conductivity : Cooper pairs, superconducting ground state (Bogoliubov procedure), quasiparticles and energy gap, temperature dependence of the energy gap.

## Paper VIII (a)—Spectra of Diatomic Molecules :

3 hrs. duration

100 marks

## 1. Vibration-rotational spectra :

Review of pure rotational and vibrational spectra of diatomic molecules, Rotation-vibration spectra, selection rules, transitions. Relative intensities of the components of rotation and vibration bands, Homonuclear and Heteronuclear molecules, examples of  $O_2$ ,  $Li$ ,  $H_2$ , ortho and para state. Quantum mechanics of Raman effect, vibrational and rotational components of Raman effect.

## 2. Electronic transitions :

Review of Induced emission and induced absorption of radiation. The vibrational structure of electronic band, band

progressions and sequences, transition moments and intensity distribution. Frank-Condon principle, rotational structure of electronic bands, electronic orbitals in diatomic molecules and potential energy curve.

### 3. Energy constants of molecules :

Methods for determining band energies., Pyrolytic and spectroscopic methods only. Band dissociation energy, Proton affinity, average band energies and the rule of additivity of band energies. Spectra of Polyatomic Molecules :

### 4. The Vibrations of Polyatomic Molecules :

The number of independent vibrations of a polyatomic molecule, the nature of normal vibrations and normal co-ordinates, quantum mechanical treatment for the vibration of a polyatomic molecule, symmetry properties of normal co-ordinates.

### 5. Rotational Vibrational Spectra :

Rotation of a linear system, symmetric, anti-symmetric character and statistical weight of homonuclear linear molecules; rotational energy, selection rules and spectra of spherical top, symmetric top and asymmetric molecules, Parallel and perpendicular bands of linear and symmetric top molecules, Examples of  $\text{CH}_4$ ,  $\text{NH}_3$ ,  $\text{CH}_3\text{Cl}$  and  $\text{SO}_2$  molecules.

### 6. The Symmetries of polyatomic Molecules :

Symmetry elements symmetry operations, point groups, symmetry operations on molecular motion, symmetry species and character table, characters of representations, classes, analysis of a reducible representation.

The characters for the reducible representation of molecular motion, number of normal modes of various symmetry types, the infra-red active fundamentals, the symmetry of group variations.

### 7. Vibrational frequencies and normal co-ordinates of Polyatomic molecules :

The K.E. and P.E. expressions for a polyatomic molecule, use of Lagrange's equation in molecular vibration problems, stretching vibrations of a linear triatomic molecule. use of symmetry in vibrational problems. Vibrational motion in internal co-ordinate system and G matrix, motion in symmetry co-ordinates, quantized vibrational motion, vibrational wave functions.

### 8. Structure of Molecules :

The Born-Oppenheimer approximation and separation of nuclear and electronic motion, LCAO method for hydrogen

molecule ion, bonding in hydrogen molecule ion LCAO/MO wave functions for hydrogen molecules. Valence bond wave functions for hydrogen molecule.

### 9. Electronic Spectra of Polyatomic Molecules :

Electronic states of polyatomic molecules. LCAO/MO for polyatomic molecules, Hybrid atomic orbitals, Aromatic molecules, simple examples like Benzene, Ethylene.

### 10. Electronic band Spectra : (Elementary ideas only).

Electronic and vibrational terms, electronic and vibrational transitions. Selection rule, vibrational-electronic interactions. The Jann-Teller effect, the Renner effect and crystal field theory.

### Paper VII! (b)—Micro-Wave & Radio Frequency Spectroscopy.

3 hrs. duration

100 marks

1. Velocity modulation and bunching process. Klystrons. Elementary principle of frequency multiplication and other millimeter wave sources. Frequency stabilization of Klystrons, (Pound frequency stabilizer), Silicon crystal detectors. Superheterodyne detection. Crystal video detection. Display systems.

2. Operating principles and application of various wave guide components (Bends, connectors, tapers, directional couplers, the magic tee, impedance matching devices, crystal holders, absorption cavity wave meters).

3. Stark modulation Oscillator. Comparison of sensitivities of super heterodyne detection, Stark and source modulation and crystal video detection.

### 2. Gaseous spectroscopy :

4. Experimental arrangements to study the microwave absorption in gases. Interpretation of the experimental results, Natural line-width a Doppler effect, pressure broadening, Wall collisions, power saturation and modulation broadening.

5. Rotation of a linear symmetric and antisymmetric character and statistical weight of homonuclear linear molecules, rotational energy, selection rules and spectra of symmetric top, asymmetric and symmetrical top molecules. Inversion spectra, spectra of HCN,  $O_3$ ,  $CH_4$ ,  $NH_3$ ,  $CH_3Cl$  and  $SO_2$ , Stark effect (without hyperfine structure) in linear, symmetric top and asymmetric top molecules.

### Magnetic Resonance Spectroscopy :

6. Basic theory : Gyromagnetic ratio, motion of a free spin in a static magnetic field—classical and quantum mechanical treatment. Classical and Quantum mechanical description. Absorption in a rotating magnetic field. Simple resonance theory of free spin of energy and spin-lattice relaxation time.

7. The Bloch equations and their steady state solutions in low H. The relationship between real and imaginary parts of complex susceptibility. Introduction to transient effects, spin echo, adiabatic passage. The atomic theory of absorption and dispersion.

### Radio Frequency Resonance Techniques :

8. Detection of steady state nuclear signals, Elementary theory of bridge and crossed coil methods. Principles of transient methods of detection. Adiabatic fast passage and pulse methods.

9. Magnetic dipolar broadening in rigid lattices—Basic interactions, method of moments, example of Benzene.

Magnetic interactions of nuclei with electrons: Experimental facts about chemical shifts, formal theory of chemical shift. The electron spin interaction, theory of Knight shift (only first order effects).

10. Relaxation of a system described by a spin temperature.

Relaxation of nuclei in a metal. Dynamic polarisation and elementary theory of ENDOR.

Introduction to electron spin resonance. Effect of spin-orbit coupling and crystalline fields on g values.

Elementary theory of NQR.

### Paper VIII (c)—Micro-Wave Electronics

3 hrs. duration

marks 100

#### 1. Transmission Lines :

Propagation of voltage and current waves on the line (Differential equations and their solutions). Reflection coefficient Standing-Wave-Ratio (S.W.R.), Characteristic Impedance, infinite line, Resonant short-circuited and open circuited lines, Q of the resonant lines, impedance matching (Quarter-Wave line, Halfwave line and stub Matching), Smith chart and its use.

## 2. Wave Guides :

*Rectangular wave guide*—Wave equation and its solutions, TE and TM modes, dominant mode and choice of wave-guide dimensions.

*Circular wave guide*—Wave equation and its solutions, TE and TM and TEM modes.

## 3. Attenuation :

Causes of attenuation in wave guides, wall currents and derivation of attenuation constant.  $Q$  of the wave-guide.

*Resonators*—Resonant modes of rectangular and cylindrical cavity resonators,  $Q$  of the cavity resonators. Frequency meters.

## 4. Wave guide Components :

Terminations (short circuit and matched terminations). Attenuators Phase-changers, Scattering Matrix of a multiport device, Directional coupler single, two hole and multi hole couples), Reflectometer, E-plane and H-plane Tees. Hybrid junction and its uses.

## 5. Antenna :

Dipole antenna, Radiation Resistance and directivity of an antenna. Radiation from a quarter wave monopole or Half wave dipole, Linear arrays.

Magnetic currents, Electric and magnetic current sheets as sources, field of a Huygen's source, radiation from the open end of a wave guide, radiation through an aperture, slot antenna, radiation from electromagnetic horns.

6. Space charge spreading of electron beam. Beam focussing Space charge waves in confined flow velocity modulation, Two cavity Klystron, Reflex Klystron, Efficiency of Klystrons.

7. Magnetrons—Types and description, Theoretical relations between electric and magnetic fields for oscillation, Modes of oscillation and operating characteristics.

Traveling wave tubes—description, Dynamics of electron beam, coupling of beam and slow-wave structure.

Noise in microwave tubes.

8. Varactor, capacity of linearly graded and abrupt p-n junction. Manley-Rowe relations, Parametric amplifiers—up converter and

negative resistance amplifier, Noise properties of parametric amplifiers.

9. Tunnel Diode—I-V characteristic. Equivalent circuit, characteristic frequencies, stability criteria, use of tunnel diode as amplifier, oscillator and switching device.

Read diode, Negative resistance of an avalanching p-n diode, IMPATT oscillator.

*Gun diode*—Gun effect, Two valley model, High field domains and Microwave generation.

10. Microwave propagation in ferrites, Permeability Matrix, Faraday rotation, Devices employing Faraday rotation (Isolator, Gyration and Circulator).

#### Suggested Reading :

1. Bronwell and Beam—Theory and applications of micro-waves.
2. Kraus—Antennas (Mc-Graw Hill).
3. Jordan—Electromagnetic waves and radiating systems, (Prentice Hall).
4. Atwater—Introduction to Microwave theory (Mc Graw Hill).
5. Chodorow and Susskind—Fundamentals of Microwave Electronics (McGraw Hill).
6. Collins—Foundations of Microwave Engineering.
7. Chow—Principles of Tunnel Diode Circuits (John Wiley)
8. Soohoo—Microwave Electronics (Addison-Wesley).
9. Van der Ziel—Solid State Physical Electronics. (Prentice-Hall of India).

#### Paper VIII (d)—General theory of Relativity & Geometry

100 marks

1. Physics and Geometry, choice of Riemannian Geometry. Vector fields in Affine and Riemann space-vector transportation, parallel transport and Fermi-Walker transport, covariant derivatives, Absolute derivatives, tensor densities, dual tensors. Geodesics, curvature tensor, Bianchi identities and Einstein tensor. Gaussian

co-ordinates, junction conditions, theorem of Stoke and Green, orthogonal tetrad and Frenet-Serret-formula, spacetime diagrams.

2. Gravity as a Metric phenomenon, field equation of relativity both in vacuum and in a material continuum.

3. Fields with spherical symmetry : Space time of constant constant curvature (de Sitter Universe). Metric Forms for spherical symmetry. Exterior and interior Schwarzschild fields, orbit and rays in the solar fields, spectral shift.

4. Mathematical structure of Einstein's field equation : The problem of Cauchy. Basic formulae for retarded and advanced potentials; Linear approximation—Cauchy problem with normal Gaussian co-ordinates. The Weyl solutions to the linearized field equations.

5. The material continuum : A statistical mode conservation laws, kinematics of continuum, the field equations and the Newtonian comparison.

6. Conservation laws and equation of motion : The concept of integral conservation laws based on Einstein tensor and Riemannian tensor. Variation principle in G. R. equation of motion for an isolated body.

7. Gravitational Waves : Weak field solutions. spherical and cylindrical gravitational waves. Linear mass Quadrupole oscillator. Radiation from a spinning rod.

8. Some selected topics in General Relativity (introduction).

( i ) Unified theories of electromagnetism.

( ii ) Equations of Motion.

(iii) Mach's principles.

(iv) Hamiltonian formulation.

(v) Quantization of G.R.

#### Cosmology :

9. Observational Cosmology : Red shift and apparent magnitudes, number counts, angular diameters, total background radiation.

Metrics used in Cosmology : Robertson Walker Metric and its discussion.

10. Cosmology Model : de Sitter and Einstein universes, static model of the universe—steady state cosmology of Hoyle and Fowler



Nonstatic models of the Universe—observational evidences quasi stellar sources and quasi-stellar radio sources (only simple conclusions arrived at from these discoveries.)

**Paper VIII (e)—Particle Physics**

—100 marks

3 hrs. duration

**1. Pion Physics :**

Nuclear forces, heavy quanta of Yukawa.  
Mass, spin, parity and lifetime of pions.

Charge independence in pion physics and iso-spin pion nucleon scattering and  $N^*$  (1236).

**2. Strange Particles :**

Connected survey, Gell-Mann Nishijima scheme; The  $\alpha.\theta$  puzzle, parity violation in  $\pi-\mu-e$  and  $\Lambda^0$  decays.

C, P and T invariance and experimental tests. The  $K^0 K$ , complex, strangeness oscillations; the Pais-Piccioni regeneration experiment.

CP violation in neutral K decay

Hyperon decays,  $\Delta I = \frac{1}{2}$  rule. Asymmetry parameters in  $\Lambda^0$  and  $\sqrt{\Sigma}$  decays.

**3. Weak Interactions :**

Four fermion couplings, parity violation. 2—component neutrino formalism helicity and chirality. V—A theory of Sunder-shan Marshak and Feynman-Gell Mann. The current interaction, conserved vector current,  $\Delta Q = \Delta S$  rule, Cabibbo angle and strange particle decays.

The two neutrino experiment; conservation of lepton number and moun number.

**4. Systematics of Particles in SU (3)\***

The SU (3) group, basic algebra and commutations relations, representation the eightfold way, baryon and meson octets, the baryon decuplet, Gell Mann-Okuto Mass formula.

**5. Electromagnetic interactions and Form factors :**

Scattering of spinless charged particles by nuclei, Mott scettering, form factor of the nucleus. Forms factors of proton and neutron. Simple ideas of deep inelastic scattering scale invariance and parton hypothesis.

*Particles and Resonances : Techniques :*

Dalitz plots, Invariant mass analysis, examples of determination of quantum numbers—Wmeson.  $Y^*$  (1385), scattering amplitude and the resonance conditions; Breit Wigner resonance formula. Application to determination of properties of meson.

Recent discoveries :  $J/\psi$  particle and the heavy lepton (only general properties ).

6. Meaning of a symmetry transformation. Wigner's theorem meaning of a conserved operator and its relation with a symmetry operator.

Parity as a symmetry transformation, consequences of parity conservation—Laoprté's rule, static dipole moment of a stationary state, intrinsic parities of  $\pi$ ,  $\pi^0$ ,  $\pi^\pm$  and kaons (No experimental details required).

Charge conjugation operation (C) eigenstates of C, C-parities for a photon,  $\pi^0$ ,  $\eta^0$ ,  $\omega^0$  and a fermion-antifermion pair, restrictions due to C-invariance in  $e^+e^-$  decays.

Time reversal operation (T), P-invariance in scattering processes and reciprocity theorem First order weak processes and test of T-invariance examples, as muondecay  $\beta$ -decay and  $K^+ \rightarrow \pi^+ \pi^0$ ,  $\pi^+ Y$ , decay, The final state theorem and the decays  $\Sigma \rightarrow n \pi^+$ ,  $\rightarrow p \pi^0$  Vanishing of electric dipole moment of a particle as a consequence of T-invariance.

7. CPT invariance and CPT theorem (no proof), consequences of CPT invariance for masses, lifetime and magnetic dipole moments.

Status of C, P, T and CPT invariances in electromagnetic, weak and strong interactions.

G-parity and its eigenvalues for pion, kaon and nucleon fields, NN selection rules from G-conjugation.

*Elements of Quantum Field Theory :*

8. Canonical formalism and field quantization. continuous symmetry transformations and conservation laws of energy-momentum, angular momentum and Charge (Noether's theorem), requirements of relativistic invariance of a theory.

9. Free Fields—Quantization of a real scalar field and particle interpretation. symmetry of the field states, microscopic causality

and vacuum fluctuations, quantizations of a complex scalar and Dirac fields and their particle interpretations.

Quantization of electromagnetic field covariance of quantization procedure, spin of the photon, the Feynman propagators for various fields.

#### 10. Interacting fields :

Generalized gauge transformation and forms of interacting Lagrangians for X.e.m. interactions, interaction picture, adiabatic hypothesis, S-matrix, covariant perturbation theory and its application to electromagnetic interaction, Feynman diagrams and rule explicit calculations for scattering cross sections for coulomb scattering in first order Compton scattering in second order, and total decay probability for the decay  $\mu^- \rightarrow e^- + \nu_\mu + \bar{\nu}_e$  (No consideration for polarization in the lowest order).

#### Paper VIII (f)—Plasma Physics : Theory and Applications

##### Basic properties and charged particle motion :

Definition and criteria for plasma behaviour; plasma frequency, quasineutrality and Debye shielding. Natural occurrence of plasmas Gaseous and solidstate plasmas. Brief discussion of the solar plasma phenomena : sunspots, solar flares and solar wind. Earth's magnetospheres. The ionosphere and its structure. Guiding centre motion of a charged particle in nonuniform magnetic field (grad B perpendicular to B; curvature drift; grad B along B : reflection from magnetic mirror. Motion in nonuniform electric field in the presence of uniform magnetic field for small Larmor radius. Time varying electric field and polarization drift. Adiabatic invariants : Magnetic moment, enclosed flux, and the longitudinal invariant.

##### Statistical description :

Ensemble concept. BBGKY hierarchy of equations. One particle distribution function and Boltzmann equation. Derivation of Boltzmann collision integral. H-theorem Fokker-Planck equation : calculation of dispersion coefficient and slowing down time for a test charge. Energy exchange time.

##### Macroscopic description and transport phenomena :

Evaluation of Collision term for electron neutral collisions. Electron distribution in the presence of strong electric field : Druyvesteyn distribution. Calculation of electrical conductivity of a weakly ionized plasma using Boltzmann equation. Derivation of moment equations from kinetic equation. Two fluid and single fluid equations. Diffusion and ambipolar diffusion.

**Plasma production and diagnostics :**

Thermal ionisation : Saha equation. Various processes in a plasma (ionization, recombination, etc.). Continuity and energy equations. Characteristic life times. Brief discussion of Methods of plasma production : assembled plasmas. irradiated plasmas, steady state glow discharge, microwave breakdown, and induction discharge. Elementary ideas about plasma diagnostics : electrostatic probe and measurement of electron density and temperature, magnetic probe. Microwave diagnostics, transmission, attenuation, and reflection experiments.

**MHD power generation :**

Basic principle and working of an MHD power generator. Hall field and ion slip effect in an MHD generator. Faraday and Hall generators. Conductivity of gaseous working fluid Basic fluid equations, Generalized Ohm's law. Performance characteristics and electrical efficiency of Faraday (single electrode and segmented electrode) and Hall generators.

**Linear waves :**

Linear waves in a hydromagnetic fluid : Alfven and magnetosonic waves. Waves in a two component plasma along and perpendicular to magnetic field. Derivation and discussion of the dispersion relation in various limits using fluid approach. kinetic description of electron plasma wave and ion acoustic wave. Landau damping and its physical explanation.

**Plasma Instability :**

Hydromagnetic equilibrium. Diffusion of magnetic field into a plasma Macro and micro instabilities in a plasma : gravitational instability, streaming (Buneman instability and resistive drift instability using fluid description. Thermodynamic consideration of interchange instability. Kinetic description of gentle bump in tail instability and ion acoustic instability. Elementary ideas of parametric instability.

**Nonlinear waves :**

Finite amplitude ion acoustic wave. Derivation of KdV equation and its properties. Soliton solution in one dimension.

**Weak plasma turbulence :**

Wave particle interactions Excitation of (weak) plasma turbulence. Equation for the evolution of averaged distribution function. Diffusion coefficient and its discussion for resonant and nonresonant particles. Quasilinear treatment of gentle bump in tail instability.

**Controlled thermonuclear fusion :**

Potentials and problems of controlled thermonuclear fusion  
 The necessity for plasma. Ignition temperature and the Lawson criterion. Magnetic confinement and simple discussion of tokamak, stellarator, pinch. and magnetic mirror systems. Ideas about inertial confinement and laser fusion.

*Books Suggested :* (for reference)

1. F.F. Chen : Introduction to Plasma Physics, 1975, Plenum Press.
2. D.C. Montgomery and D.A. Tidman : Plasma Kinetic Theory, 1964, McGraw Hill.
3. R.C. Davidson : Methods in Nonlinear Plasma Theory, 1974, Academic Press.
4. W.B. Kunkel : Plasma Physics in Theory and Applications, 1964, McGraw Hill.
5. N.A. Krall and A. W. Trivelpiece : Principles of Plasma Physics, 1973 McGraw-Hill,
6. S. Glasston : Controlled Thermonuclear Reactions.
7. Holt and Haskel : Foundations of Plasma Dynamics.
8. Hudleston and Leonard : Plasma Diagnostics. Technique.
9. Rosa : Magnetohydrodynamic Power Generation, McGraw-Hill.

**Paper VIII (g) : TELEVISION ELECTRONICS :**

3 hrs. duration 100 marks

*Fundamentals of Television :*

Basic of Television Transmission, general considerations of picture, quality, picture quality in relation to television transmission, Flicker, Resolution. Theory of scanning, Standards of transmission.

**Signal Amplification***Video Amplifiers :*

Requirements of a Video amplifier, amplifier types, Resistance coupled amplifier. High frequency correction. The general coupling network, Low frequency response, overall amplifier, Additional frequency correction, non-linear amplification. Noise considerations, signal and noise in video systems, blanking and signal insertion, video cable, the complete amplifier.

*Picture I. F. Amplifiers :*

Picture of I. F. response, Intermediate frequency, I. F. amplification double tuned I. F. amplifiers, single tuned I. F. amplifiers, Staggered tuned stages, wave traps, picture I.F. alignment, picture IF amplifier circuits. Troubles in the picture IF amplifiers.

*Modulation :*

Principles of anode and grid modulation, Operating condition of modulation systems, anode and grid modulated class C amplifiers, class B audio modulators (modulating amplifiers), video modulator, typical circuits modulator power requirements. Linear class B amplifier for modulated waves.

*T.V. Power Supplies :*

Design considerations of a power supply and filter circuits (Half wave and full wave rectifier). D.C. voltage polarities, heater circuits, voltage doublers, transformerless low voltage power supply, stacked B circuits, rectifier ratings, high voltage troubles, troubles in the low voltage power supply, high, damper tube.

*Special Electronic Circuits :*

Limiting and clipping amplifiers, Peaking circuits, D.C. restoration and clamping, rectangular wave form analysis, Continuously acting clamps, switched clamps.

*The Receiver :*

Elements of the TV receiver, RF amplifier, frequency converter and local oscillator, receiver noise, IF amplifier, detection and video amplification, Synchronization, AGC., Separation of horizontal and vertical sync pulses, horizontal and vertical deflection systems, d.c. component, sound system, transient response of a TV receiver.

*T.V. Receiver Servicing :*

Servicing guide points in TV receivers, RF system, the video circuit, additional video amplifier defects, servicing picture tube circuits, servicing low voltage power supplies, sync separator stages, vertical deflection system, horizontal deflection system. servicing AIC circuits. Applications of Industrial TV, requirements of a general purpose industrial TV system. Industrial TV systems, special Forms of industrial TV requirement, T.V microscope, video tape recording. Introduction to satellite communication.

### Visual characteristics, colour specification, and signal analysis :

Resolving power of the eye, Storage characteristics of the eye, Brightness and colour in the visual process, System requirements for the preservation of image detail, Scanning method and the video signal, Low-frequency requirements, An estimate of system requirements, Other aspects of the theory of scanning, Brightness transfer characteristics of system and spectral response of terminal devices, Increased Channel capacity by more effective spectrum utilization, Bandwidth requirements for adding chrominance information, Colour-system classification, Line and field sequential systems, Dot-sequential systems, Basic simultaneous band-shared colour-television systems. Improved band-shared systems.

### The Iconoscope :

Construction of the iconoscope; The Mosaic, Exhaust and activation schedule, performance tests, Theory of operation. Characteristics of the Mosaic, Potential distribution on the mosaic, The mosaic under the influence of a light image, The formation of the video-signal, Line sensitivity, Black spot, performance of the Iconoscope. Limiting sensitivity, Depth of focus. Pickups for motion-picture film, the Type RCA 185 OA Iconoscope, Summary.

### Television Pickup tubes :

Limiting sensitivity of pick-up devices, the Two sided target, Low-velocity scanning, The orthicon. The image iconoscope Multi-stage Image-Multiplier pickup tubes signal multiplication, Image-Orthicon, Performance of the image orthicon, The Isocon, Photo conductive pickup tubes, The storage tube, The monoscope, Conclusion.

### The Kinescope :

Requirements of the kinescope. Construction of the Kinescope, Bulb-Round glass tubes, Metal tube bulbs, rectangular tubes. The electron gun. The fluorescent, Screening Procedure Metal backing of kinescope screen, Screening Procedure Metal backing of kinescope screens, processing of the Kinescope Tests and performance. Contrast. Direct-View kinescope, Projection kinascope.

### The Electron Gun :

Requirements of the electron gun, The two-leads electron gun, Limiting performance of an electron gun The cathode first lens and control grid, The second Lens, The Loan gun, the kinescope gun. Guns for Low velocity beam tubes.

**Scanning circuits :**

Generation of saw-tooth voltage wave forms, capacitive loading effects on saw-tooth amplifiers, Generation of linear scanning voltage wave forms at high level, Generation of linear current waveform in inductive circuit, Generation of required trapezoidal voltage waveform, Sweep amplifiers for electromagnetic deflection (low frequency case), Sweep circuits for electromagnetic deflection (high frequency case), Production of Accelerating potential from sweep flyback.

**Circuits involved in timing and Synchronizing Operation :**

Relaxation oscillators, The multivibrator, The monostable multivibrator, The cathode-coupled type, The bistable multivibrator. Improvement of multivibrator response. The Blocking oscillator, synchronized and triggered blocking oscillators, frequency dividing circuits, Single-mixing and Keying circuits, Elements of frequency comparison, and Central locks. Frequency control circuits—General consideration.

**The Synchronizing single Generator :**

Basic timing operations, Choice of methods, synchronizing single generator design Synchronizing single generator, Circuit details, Auxiliary output circuits, Basic control frequency and power system lock circuit, additional requirement of synchronizing generator for subcarrier colour system.

**The Colour television system :**

Colour signals, colour addition, definition of colour TV terms, colour TV broadcasting. Y—signal, types of colour video signals, I—signals, R—Y Signal, B—signal, G—Y signal, desaturated colours, the transmitted chrominance signal, matrix circuits, colour subcarrier frequency, colour synchronization, colour-plexed composite video signal wave forms vector addition of colour signals, Colour picture tubes.

**References :**

1. Zworykin and Morton : Television 2nd ed.
2. B. Goob : Basic Television, Principles and servicing.
3. Ryder : Engineering Electronics.
4. S. Seely : Electron tube circuits.
5. M. Kiver : Television simplified 6th ed.
6. L. Jaffe : Communication in Space.
7. Fundamental of television engineering by Blenn M. Glasford.



8. Television by V.K. Zworykin and G.A. Morton.
9. Colour television fundamentals by Kiver.

*Practical :*

1. Klystron characteristics,
  2. Dielectric constant of a solid.
  3. Use of Smith Chart and determination of Impedence.
  4. Transmission line.
  5. Radiation pattern of a horn.
  6. Verification of Mosley's Law and Bragg's Law.
  7. X-Ray Spectra.
  8.  $\beta$ -ray spectrograph.
  9. Absorption of X-rays.
  10. Scintillation Spectroscopy.
  11. Disiribution of Photo electrons.
  12. Hall effect.
  13. Mossbauer effect.
  14. Magnetic susceptibility.
  15. Dissociation energy of a diatomic molecule.
  16. CM Band spectra.
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MINUTES OF SPECIAL MEETING OF THE B.O.S. IN GEO-  
LOGY, HELD ON 18/19TH-6-79 AT 12.00 NOON IN THE  
UNIVERSITY DEPARTMENT OF GEOLOGY,  
STATION ROAD, UDAIPUR.

Present :

1. Prof. M.W. Chaudhari (in Chair)
2. Dr. B.L. Sharma
3. Shri N.C. Jain
4. Dr. R.K. Srivastava

With reference to Academic Council Res. No. 16 dated the 15th May, 1979 and the Syndicate Res. No. 2(III) dated 26/27th, May, 1979, the Board thoroughly discussed the question of annual examination scheme. Two course of actions were thought :

1. To amalgamate the existing papers and reduce their number to 4 each for M.Sc. Previous and M.Sc. Final Examinations.
2. To opt for eight papers each in M.Sc. Previous and M.Sc. Final Examinations.

The first option was not acceptable to the Board as this would result in the dilution of Academic Standards.

The Board, therefore, unanimously recommended the following scheme and Syllabi of examination of 1980 and onward for P.G. classes (*Vide Appendjx-I*).

**M.Sc. (Previous) Examination 1980 and 1981 :**

- |            |                    |
|------------|--------------------|
| Paper—I    | Structural Geology |
| Paper—II   | General Geology    |
| Paper—III  | Crystallorgraphy   |
| Paper—IV   | Mineralogy         |
| Paper—V    | Palaeontology-I    |
| Paper—VI   | Palaeontology-II   |
| Paper—VII  | Stratigraphy-I     |
| Paper—VIII | Stratigraphy-II    |

**M.Sc. (Final) Examination 1981 and 1982 :**

Paper—IX	Economic Geology-I
Paper—X	Economic Geology-II
Paper—XI	Igneous Petrology
Paper—XII	Metamorphic Petrology
Paper—XIII	Applied Geology-I
Paper—XIV	Applied Geology-II
Paper—XV	Sedimentology
Paper—XVI	Photogeology

Consequent to abolition of Semester Examination Scheme the Board recommended following restructuring of Practical Examination.

**M.Sc. (Previous) Practical Examination 1980 and 1981 :**

1. Structural Geology and Stratigraphy	4 hrs.
2. Crystallography and Mineralogy	4 hrs.
3. Palaeontology	4 hrs.
Total maximum marks including Field Reports etc.	250 Marks.

**M.Sc. (Final) Practical Examination 1981 and 1982 :**

1. Economic Geology	4 hrs.
2. Igneous and Metamorphic Petrology	4 hrs.
3. Sedimentology and Photogeology	4 hrs.
4. Mining, survey and Applied Geology	4 hrs.
Total maximum marks including Field Report.	200 marks.

The Board recommended no change in the existing syllabii consequent upon the abolition of unit system.

The meeting ended with a vote of thanks to the Chair.

Sd/- M.W. Choudhari  
*Convener*  
 B.O.S. in Geology

## SCHEME OF EXAMINATION

## M.Sc. Geology

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-Voce (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field Work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination, and (ii) at least 36% marks in practical (s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60% }	of the aggregate marks taken together of the Previous and the Final Examination.
Second Division	48% }	
Third Division	36% }	

4. If a candidate clears any Paper(s) /Practical (s)/ Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz. 25% (36% in the case of Practical) shall be taken into account in respect of such Paper(s) /Practical (s)/Dissertation/Viva-Voce as are cleared after the expiry of the aforesaid period of three years : provided that: in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. Only such candidates shall be permitted to offer dissertation/Field work/Survey Report/Thesis (if Provided in the scheme of Examination) in lieu of a paper as have secured atleast 55% marks in the aggregate of all the papers prescribed of the Previous Examination in the case of annual scheme and I and II semester examinations taken together in the case of semester scheme. Irrespective of the number of papers in which a candidate actually appeared at the Examination.

6. The Viva-voce test shall be held at the end of the Final year of the Course. The Collegiate Candidates shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

## APPENDIX—I

## M.SC. EXAMINATION

## Geology

*(Annual Scheme)*

Each paper 3 hours 50 Marks.

The number of papers and the maximum marks for each, paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in theory part as well as in the practical part (wherever prescribed of a subject/paper separately).

For rules regarding determining results of candidates and working out division of successful candidates—See clauses (i) and (ii) of para 15-A of O.198-C of the University Hand Book Part-II.

## M.Sc. Previous Examination, 1980.

## Theory Papers :

3 hrs. duration each—		Max. Marks	Min. Pass Marks
		Theory	
Paper—I	Structural Geology Sec. A	50	144
	General Geology Sec. B	50	
Paper—II	Crystallography	50	
	Mineralogy	50	
Paper—III	Palaeontology-I	50	
	Palaeontology-II	50	
Paper—IV	Stratigraphy-I	50	
	Stratigraphy-II	50	

## M.Sc. Final Examination 1981.

Paper—V	Economic Geology-I	50	144
	Economic Geology-II	50	
Paper—VI	Igneous Petrology	50	
	Metamorphic Petrology	50	
Paper—VII	Applied Geology-I	50	
	Applied Geology-II	50	
Paper—VIII	Sedimentology	50	
	Photogeology	50	

Consequent to abolition of Semester Examination Scheme the Board recommended following Restructuring of Practical Examination.

**M.Sc. (Previous) Practical Examination, 1980 :**

1. Structural Geology & Photography	4 hrs.
2. Crystallography and Mineralogy	4 hrs.
3. Palaeontology	4 hrs.
Total Maximum Marks including Field Reports etc.	250 Marks.

*Note* :—Each written paper shall be of Three hour's duration and Practical Examination including Viva-Voce, shall ordinarily not extend beyond 4 hours.

**M.Sc. (Final) Practical Examination, 1981 :**

1. Economic Geology	4 hrs.
2. Igneous & Metamorphic Petrology	4 hrs.
3. Sedimentology Photogeology	4 hrs.
4. Mining, Survey and Applied Geology	4 hrs.
Total Maximum Marks including Field Report etc.	200 Marks.

*Note* :—Each written paper shall be of 3 hours duration and Practical Examination including Viva-voce shall ordinarily not extend beyond 4 hours.

**M.Sc. Tech., (Applied Geology)**

Theory Papers :	Max. Marks Theory	Min. Pass Marks
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3 hours duration each.

Paper-I	—Section A. Structural Geology	50	}	144
	Section B, Micropalaeontology.	50		
Paper-II	Mining Geology and Prospecting	100	}	
Paper-III	Mineral Technology & Mineral Economics	100		
Paper-IV	Engineering and Ground Water Geology	100	}	
	Practical Examination for Three days	300		

## M.SC. PREVIOUS EXAMINATION, 1980

## Paper-I—Structural Geology

3 hrs, duration—

50 Marks

Bedding, internal and external forms, penecontem poraneous deformation of bedding: unconformities, mechanical principles—stress and strain, plastic deformation, strain ellipsoid.

Morphology of fold forms, attitudinal variation of fold elements; Geometric and genetic classification of fold elements, mechanism of folding—buckle and bending folds, cylindrical, noncylindrical and conical folds, Superimposed folds.

Types of cleavage; cleavage fans and axial plane cleavage, Refraction of cleavage. Mechanical interpretation of cleavage, Relation of cleavage to major structure.

Types of linear structure and their tectonic significance. Deformation of linear structure.

Nomenclature of faults, minor structures associated with faults. Effects faulting on outcrop pattern, classification of faults, mechanics of faulting. Recognition of faults. Joints Structure of igneous rocks, Determination of top of beds.

Total questions 8 Q.

*N.B.* :—No. of question to be answered 5. Internal choice of one question may be given.

## Paper-II—General Geology

3 hrs. duration—

50 Marks

Shape size density and constitution of the earth. Age of the earth. Radioactivity and surface history of the earth.

Earthquakes, Volcanism, Past climates, Coral reefs.

Isostasy, origin of continents and oceans. Origin and structure of mountains.

Geosynclines, Rift valleys, Mid oceanic ridges Island arcs. Continental drift. Plate tectonics.

Total Question —8

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.



**PAPER-III—Crystallography**

3 hrs. duration—

50 Marks

Historical development of crystallography. Stereographic and other important projections. Law of rational indices.....

Thirty two classes of symmetry, their derivation and determination.

Twinning Goniometry and important mathematical relationships; Spherical triangle, Napierian triangle, calculation of axial ratios with the help of Napierian triangles.

Crystal structures :

- (i) Space lattices and elements of the symmetry of internal structure. Derivation of the space group of Monoclinic and triclinic systems.
- (ii) X-ray crystallography: Bragg's Law. The powder single crystal, Laue and diffractometer methods in X-ray crystallography.

Total question 8 Q.

*N.B.*—No of questions to be answered 5. Internal choice of one question may be given.

**Paper-IV—Mineralogy**

3 hrs. duration—

50 Marks

**Section-A**

- (i) Optical methods of investigation of rock forming minerals including the use of universal stage.
- (ii) Crystal chemistry : Isomorphism, Polymorphism and classification of silicates.

**Section-B**

Detailed study of important rock forming minerals with respect to their chemical constitution, crystal forms. Physical and Optical properties, modes of origin, association occurrence and alteration.

Olivine, Pyroxene and Amphibole groups.

Garnet, Feldspars and Mica groups.

Remaining important rock forming minerals.

Total questions 8 Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question in each section may be given.

## Paper-V—Palaeontology-I

3 hrs. duration—

50 Marks

Principles of Palaeontology : Definition and subdivision. Fossils and their preservation, Nature of palaeontological record, collection and preparation. Uses fossils as stratigraphic, palaeoenvironment and organic evolution indicators. Classification and nomenclature Concept of ecology and palaeoecology. Organic evolution and bearing of palaeontological data on it. Dispersal, migration and extension of species.

Study of morphology, classification, palaeoecology, geological history, evolutionary trends and more important genera (with particular emphasis on forms from Indian subcontinents) of the following faunal groups :

Protozoa—Forminifera, Ceolentrata Corals, Echinodermata-Echnoidea, Crinoidea, Hemichordata-Graptolites.

Brachiopoda.

Arthropoda Trilobita.

Total : 8Q

*N.B.*—No. of questions to be answered 5, Internal choice of one question may be given.

## Paper-VI—Palaeontology-II

3 hrs. duration—

50 Marks

Mollusca : Study of morphology, classification palaeoecology, geological history, evolutionary trends and more important genera (with particular emphasis on forms from the Indian subcontinent) of the following classes of Mollusca : Bivalvia, Gastropoda and Cephalopoda.

Classification of vertebrates and their sequence through geological line. Evolutionary trends of important mamalian groups Study of more important general of mammalia from the Indian subcontinent.

Palacobotany : Broad outline of the classification of plants, their sequence through geological time-Study of the past Indian flora with special reference to the Gondwana plant life.

Total : 8Q.

*N.B.*—No. of questions to be answered is 5. Internal choice of one question may be given.

## Paper-VII : Stratigraphy-I

3 hrs. duration—

50 Marks

Answer Atleast 2 question from each Sections.

## Section 'A'

Principles of stratigraphy :

- (i) Basic stratigraphic relations : Nature of stratification, Attitude of stratification, special varieties of stratification and rock sequence.
- (ii) Development of stratigraphy and founding of the Geologic systems.
- (iii) Stratigraphic relationships—Lithosome, shape, vertical relationship, lateral relationship and combined lateral and vertical relationships.

Sedimentary facies, Principles of correlation : Correlation of lithographic units, correlation of biostratigraphic units. Time, stratigraphic correlation.

Sedimentary Tectonics : Berrell's concept of sedimentation and subsidence Sedimentation and rate to subsidence Epeirogeny and orogeny. Development of geosynclinal theory Schuchert and Stille's classification of geosynclines Kays classification of tectonic cycles and Associated igneous activity Tectonic classification of Krumbein and Sloss Tectonic and Sedimentary environment.

Stratigraphic maps : Classification of stratigraphic maps structure contour maps. Isopach maps. Stratigraphic analysis : The concept of stratigraphic model. Observation lithologic association plastic association and nonplastic associations.

## Section 'B'

- (i) Structure and tectonics of Indian shield
- (ii) Detailed study of the Precambrian formations of India.

Total : 9Q

N.B.—No. of questions to be answered 5, Internal choice of one question may be given.

## Paper-VIII : Stratigraphic-II

3 hrs. duration—

50 Marks

Geology of India (Cambrian to Recent)

Standard stratigraphic scale and its equivalents in Indian subcontinents. Tectonic and physiographic division of Indian sub-

continent structure and evolution of Himalayas and Indogangetic plain.

Nomenclature, extent, divisions and successions structure sedimentation, fauna, flora, climate, palaeogeography and correlations of :

- ( i ) Palaeozoic
- ( ii ) Gondwanas and Mesozoic.
- (iii) Tertiary to Recent.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

#### M.Sc. (Previous) Practical Examination, 1980

- |  |        |
|--|--------|
| 1. Structural Geology, Palaeontology, stratigraphy | 8 hrs. |
| 2. Crystallography and Mineralogy                  | 4 hrs. |

Total Maximum marks including field reports. —250 Marks

#### Practical Works :

##### *Structural Geology :*

1. Solution of structural problems by stereographic and orthographic projections.
2. Recognition of structural elements in hand specimens.
3. Structural analysis with stereonets : S—pole and beta diagrams : Fold axis and axial plane; Contoured diagram methodology and interpretations of patterns.
4. Predication of out crop pattern.
5. Geological maps and Cross sections.

##### Mineralogy :

1. Identification of minerals by physical, chemical and microscopic examinations.
2. Determination of optical characters of chief rock-forming minerals under microscope.

##### *Crystallography :*

1. Identification and descriptions of crystal models in hand specimens.
2. Construction of stereographic Projections and determination of axialratrations and problems related to stereographic projection.

3. Simple gnomonic projection and problems based on Napier's rule.

*Palaeontology :*

Drawing description and identification of important invertebrate, vertebrate & Plant fossils.

*Stratigraphy :*

1. Stratigraphic and Palaeogeographic maps with special reference to India.
2. Identification and assigning to stratigraphic horizons of Indian rocks in hand specimen.

*Field Work (M.Sc. Previous) :— 25 marks.*

1. Field study of geological formations for at least three weeks.
2. Geological mapping of a selected area for at least three weeks.

Field works are compulsory and student not taking part in the Geological Field Work shall be detained.

**M. Sc. Final Exam., 1981**

Paper-IX : Economic Geology-I

3 hrs. duration—

50 Marks

(Process of ore genesis and mineral fuels).

Magma and its relation to mineral deposits. Orthomagmatic deposits, pegmatitic deposits, contact metasomatic deposits. Hydrothermal deposits (metasomatic replacement deposits and cavity filling deposits)

Secondary enrichment—Oxidation, solution and precipitation in the zone of oxidation. Oxidized deposits and gossans Supergene sulphide enrichment—process and deposits.

Secondary deposits : Deposits formed by mechanical processes of transportation and concentration (placer deposits). Deposits formed by sedimentation and evaporation. Mineral deposits formed by residual concentration process.

Mineral deposits formed due to metamorphism General :— forms, structure and texture of mineral deposits. Ore shoots. Classification of mineral deposits. Structural control of mineralization Geological thermometers, metallogenic epochs and provinces.

Mineral fuels, Coal : Nature, characteristics, origin, distribution, classification and commercial uses of coal. Coal fields of India, conservation and utilization. of coal petroleum : Nature, characteristics, origin and occurrence of oil. Oil fields of India Burma and Pakistan. Principal oil fields of the world. Radioactive mineral deposits of India and their potentialities.

Paper-X : Economic Geology-II

3 hrs. duration—

50 Marks

Metallic mineral deposits : the study of the following with reference to origin, mode of occurrence, distribution in India and use :—Gold, Copper, Lead and Zinc, aluminium, magnesium, iron, manganese, chromium, and strategic minerals of India.

Non-metallic mineral deposits : Industrial geology, Refractories. Abrasives, ceramics and glass making materials, fertilizers Natural paints, and pigments. Cements and Gem minerals.

Study of the following with reference to origin, mode of occurrence, distribution in India and uses. Mica, Vermiculite, Asbestos, Barytes, Gypsum, Garnet Corundum, Kyanite, Silimanite, Graphite, Talc, fluor spar, Beryl, Zircon, Cock-phosphate and others, A brief outline of principal metallic and non-metallic mineral deposits of the world.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

Paper-XI : Igneous Petrology

3 hrs. duration—

50 Marks

Forms, structures and textures of igneous rocks. Average composition and constitution of magma.

Crystallisation process in silicate melts including the following Systems : Asybite-Anorthite: Albite-orthoclase; Forsterite-silica, Lencite-silica; Diopside-Anorthite-Albite; Diopside-Forsterite-silica; Nepheline-kaliophylite-Silica; Forsterite-Fayalite-Silica.

Reaction principle in geology. Differentiation of magma. End stages of crystallization of magma and origin of magmas.

Chemical and mineralogical classification of igneous rocks. Petrography, mode of occurrence and petrogenesis of the following rock groups and associations. Basic and ultrabasic plutonic association. Granite and Granodiorite plutonic association. Nepheline

syenite, ijolite, anorthosite and pegmatite. Tholitest and alkali olivine basalts of the oceanic regions. Basalt andesite and rhyolite association of orogenic regions. Spilites and potash rich volcanic rocks. Lamprophyres and carbonatites.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

**Paper-XII : Metamorphic Petrology.**

3 hrs. duration—

50 Marks

Definition and types of metamorphism, Texture and structure of metamorphic rock.

Factors of metamorphism, concept of metamorphic zones and facies A.C.F. and A.K.F. diagrams.

Barrovian and Abukuma type facies series. Glauco-phane schist, eclogite, and granulite facies. Megmatites and charnockites-definition petrography and petrogenesis.

Mineralogical and textural changes accompanying progressive regional metamorphism and thermal metamorphism. Principles of metasomatism and metamorphic differentiation.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

**Paper-XIII Applied Geology I**

(Hydrology and Elements of Applied Geology)

3 hrs. duration—

50 Marks

Elements of ore search and ore guides surface prospecting methods-tracing the float pitting, trenching and prospecting by bore hole drilling.

Outlines of Geophysical and geochemical prospecting.

Engineering Geology : Role of geology in civil engineering building material, construction of dams and tunnels.

Ground Water Geology : Occurrence and distribution of groundwater, Hydrological properties of rocks, Ground water

prospecting methods, prospecting and development of ground water in Rajasthan.

Ore dressing properties of minerals as applied to ore dressing fundamentals of communication and concentration.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

Paper-XIV : Applied Geology-II

(Elements of Mining and Mining Geology)

3 hrs. duration—

50 Marks

Definition scope of mining and mining terms. Boring, Classification of boring methods, cable drilling rotary drilling, diamond drilling chilled short drilling.

Breaking ground. Types of drilling machines explosives : Types of explosives their uses and handling.

Blasting : Patterns of blast holes methods of examining blast holes, changing blasting practices and precautions.

Surface mining methods : Open pit and alluvial mining advantages and limitations.

Underground mining methods : Development of different stopes. Various stoping methods and their geological limitations. Coal Mining methods sampling and estimation of ore reserves.

Total : 8Q.

*N.B.*—No. of question to be answered 5. Internal choice of one question may be given.

Paper-XV : Sedimentology

3 hrs. duration—

50 Marks

Mineral Composition of sedimentary rocks Quartz Chert, opal, feldspars, micas, rock fragments, clays minerals, minerals, carbonates, heavy minerals.

Texture of sedimentary rocks : Size, shape fabric.



Sedimentary structures and their significance.

Mass properties of sediments : Colour, Porosity, permeability.

Classification and nomenclature of sedimentary rocks : Gräus classification krynimes classification Pettijohns classification. Tetrahedral classification of sedimentary rocks and common sedimentary families.

Description of sedimentary rocks.

- (a) Clastic sedimentary rocks : Gravels, conglomerate, breccia, sandstone, graywacke, shale, siltstone.
- (b) Nonclastic sedimentary rocks : Limestone, dolomite, evaporite, chemical sediments, organic sediments.

Rock weathering, Physical, chemical and bio-logical weathering. Soil profile, soil forming processes-clay minerals.

Transportation of sediments : Setting velocity of spheres, stockes law, impact law. fluid flow movement of particles. Suspension transport, traction transport. Sallation movements selective transportation. Particle wearing during transport Sediment maturity.

Deposition : Deposition of clastic sediments. Deposition of nonclastic sediments. Process and reponse in sedimentary transport and deposition.

Sedimentary environment. Tectonic and sedimentation. Post depositional changes in sediments.

Total : 8Q.

*N.B.*—No. of questions to be answered 5. Internal choice of one question may be given.

Paper XVI

Photogeology

3 hrs. Duration.

50 Marks.

Photogrammetry versus photo-interpretation. History of development of Photogrammetry. Aerial and Terrestrial Photogrammetry and their applications. Types of Photographs.

Geometric characteristics of an Aerial Photograph-Viewing of photographs, scale of vertical Photographs.

Aerial Photography : Types of Aerial Photography, Films, cameras, Lenses, Fiducial Marks, overlap, Focal length, Flying Height, Angle of photography, Ground Control and Flight Procedure Mosaics.

Errors and Distortions in Aerial Photographs. Measurement of Heights from Single Photography by the Height Distortion Method.

The Aerial Photograph and Map; features of each and their respective advantages.

Stereoscopy, Normal vision and Depth Perception, Stereoscopic vision; vertical Exaggeration Principle and use of the Pocket and Mirror Stereoscopes, Parallax Bar, Anaglyph. Stereoscopic Measurements and Floating Marks.

Plotting from photographs; Rectification of Aerial Photographs; Mechanical and Graphical methods of Radial Triangulation and methods of transferring of detail to base map. Plotting instruments. Preparation of geological maps from Aerial Photographs, the choice and density of detail; Annotation.

Interpretation of Aerial Photographs. Factors affecting the photo-interpretation.

Geological interpretation of Aerial Photographs or recognition of geomorphological, structural and stratigraphical features; lithology and soils. Interpretation of Aerial Photographs in Petroleum Geology, Mineral. Exploration and Engineering Geology.

Elements of Remote Sensing.

Total : 8 Q.

*N.B.*—No. of questions to be answered —5. Internal choice of one question may be given.

### M.Sc. (Final) Practical Examination 1981.

1. Economic Geology, Mining, surveying and applied Geology 8 hrs.
2. Igneous and Metamorphic petrology, sedimentology and Photogeology. 8 hrs.

Total maximum marks including Field reports. 200 marks

### Practical works :

#### *Economic Geology :*

1. Study of ore minerals in hand specimens.
2. Determination of simple ore minerals by dry and wet methods.
3. Microchemical Tests.

4. Determination of important ore minerals under the reflected light.

*Igneous rocks :*

1. Description and identification of igneous rock in hand specimens and under microscope.
2. Determination and representation of chemical analysis of igneous rocks.
3. Petrographic methods and calculations

*Sedimentology :*

1. Study of common sedimentary rocks in hand specimen and in thin section.
2. Graphic representation of data in sedimentary

**Petrology** —Histogram, Cumulative curves, Frequency curves, Rose diagrams, Star symbols.

*Survey :*

Survey by chain, Prismatic compass, Plane table and level. Working knowledge of theodolite survey.

**Metamorphic Petrology :** Identification in hand specimens and under microscope, Petro-Chemical calculations, and representation. Photogeology-Interpretation of aerial photographs with the help of stereoscope.

*Field Work : 20 marks.*

1. **Field :** Study of igneous and metamorphic rocks, economic deposits etc, for three weeks.
2. Study of mining methods (two weeks)

Field works are compulsory and student not taking part in the Geological Field Work shall to be detained.

## M.Sc. (Tech.) Applied Geology Examination, 1980.

## Paper I—Structural Geology of Micropalaeontology, :

3 hrs. duration

100 Marks.

## SECTION A—Structural Geology

- (i) Analysis of deformation : Mechanics of deformation: Strain allipsoid: Homogeneous and inhomogeneous deformation: Progressive strain. Determination of rocks to stress.
- (ii) Microstructures of deformed rocks and crystallographic preferred orientations in deformed rocks. 1 Q.

Principles of structural analysis and diagrams-methods and interpretations. Criteria of recognition of polyphase deformation. Fold shapes and outcrop pattern. Analysis of area with simple and complex structures. 1 Q.

*Structural Associations :*

- (a) Block faulted and rifted regions
- (b) Wrench faults and associated structures.
- (c) Thrust belts, tectonic melanges, mylonite zones.
- (d) Simple and multiple deformed belts.
- (e) Nappe Structures.
- (f) Mantled gneiss domes and gneissic regions 1 Q.  
 Plate tectonics and Mettallogeny. 1 Q.  
 Short Notes :— 1 Q.

Total 5 Q.

## SECTION B—Micropalaeontology

- (i) Introduction. Historical account of development of subject. Classification of microfossils. Techniques of collection, preparation and preservation of microfossils. Application of micropalaeontology in determination of age of the stratum, local and regional correlation of succession, palaeofacies, and tectonic history of the basin. Procedure in classification and nomenclature.

- (ii) Study of the following groups of Micro-organism :

Foraminiferida. The living animal. Alternation of generations, morphology of the test, classification and systematics of superfamilies, families and more important genera (with particular reference to form Indian subcontinent) and their phylogenetic relationship. Ecology and palaeoecology Geological history.

Ostracoda; Morphology, classification, Systematics and important genera, ecology and palaeology and geological history.

Conodonts Morphology, Classification, Origin and geological history,

Pollens spor and seeds : Morphology, Classification and geological history.

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Total 4 Q.

*N.B.* :— No. of question to be answered : Section A.....3, Section B.....2.

Internal choice of one question in each section may be given.  
3 hours duration 100 marks

Paper II Mining Geology and Prospecting :

1. General principles of surface and underground mining.
2. Field technies : Field examination and development of prospects. Geological work at operating mine. Field equipment. Ore search and guide appraisal and estimation of ore reserves, methods of surface and underground prospecting including pitting trenching bore hole drilling sampling and assaying methods.
3. Laboratory techniques, Interpretation, correlation and use of field data preparation of maps and writing of field reports.
4. Fundamentals of geophysical prospecting. Principles involved in the construction and use and geophysical instruments. Field techniques and interpretation of data, principles of geochemical prospecting.
5. Principles of ore microscopy.  
Short notes on 1,2,3,4,5.

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Total 8 Q.

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*N.B.* :—No. of questions to be answered 5.

Internal choice of one question may be given.

Paper III : Mineral Technology and Mineral Economics.

3 hrs. duration—

100 marks

Atleast TWO questions are to be answered from each section.

#### SECTION A—Mineral Technology

Mineral dressing and beneficiation. Principles and modes of separation of ore from gangue.

Crushing grinding and heat treatment.

Screening and filtration, sink and float, sedimentation, concentration and floatation.

Washing mills. Other methods. Processing for special purposes.

## SECTION B Mineral Economics

Importance of minerals in national economy. Patterns of mineral relationship. National policy.

Geographical and political factors in mineral uses and in price structure. Feature peculiar to mineral economics, Economic factors common to mineral and manufacturing industries.

Demand supply production and marketing, strategic, critical and essential mineral. Mineral concession rules in India.

World resources and production of important minerals. Importance of steel and fuels in modern economy. Impact of atomic energy on conventional fuels. Economic of important minerals and metals.

Total	8 Q.
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*N.B.* :—No. of questions to be answered 5. Internal choice of one question in each section may be given.

## Paper IV—Engineering and Ground Water Geology.

3 hrs. duration. Theory : 100 marks

At least two questions are to be answered from each Section.

### Section—A

Geology as applied to engineering problems. Subsurface exploration. Masonry dams and reservoirs.

Tunnels highways, earthquakes and aseismic design Landslides and other crustal displacements.

Foundations of bridges and payments. Building site exploration and foundations. Shore-line engineering and river improvement.

Earthwork, Engineering properties of rocks. Elements of soil mechanics. Models and engineering reports. Elements of photogeology.

### Section—B

Introduction, History of ground water development. Economic importance of ground water. Elements of ground water

hydrology. Source of ground water and origin. Hydrologic cycle, occurrence and distribution of ground water.

Hydrological properties of water bearing materials. Different types of openings in rocks Porosity, permeability, transmissibility, storage coefficient, specific yield, specific retention, Laws governing them and methods of their determination.

Occurrence of ground water in different types of rocks—igneous, metamorphic and sedimentary (soluble and non-soluble and non-indurated sediments). Water table—Importance of water table, causes of fluctuation of water table, water table and pressure surface maps, methods of their construction and their interpretations. Fresh and salt water relationship in coastal areas.

Exploration of ground water: Geological methods, Hydrological methods; Geophysical methods. Wells: Different types of wells and equipments of their construction. Well hydraulics; well characteristics and their determinations. Use and conservation of ground water, problem of availability of ground water. Artificial recharge of ground water.

Basin-wide development of ground water. Development of ground water in Indian subcontinent. Ground water provinces of India. Prospecting and development of ground water in different parts of India.

Total	9 Q.
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N.B. :—Number of questions to be answered is 5.

### Practical Examination M.Sc. (Tech) Applied Geology, 1980

Practical examinations would be conducted for three days.

Total Marks 300

- |         |   |
|---------|---|
| Paper I | 1. Interpretation of Geological Maps.   |
|         | 2. Graphic solutions of structural problem with the help of Stereographic and orthographic projections. |
|         | 3. Preparation of structure contour maps and isopach maps.  |
|         | 4. Problems on drill hole data.   |

Drawing and study of important fossil genera with special reference to Indian forms.

Paper II & IV Ore microscopy. Problems related to ore estimation, Mine mapping and underground surveying by level and theodolite.

Paper III—Assaying of ores of Manganese, Irons, Lead, Zinc, Copper and of Limestone and Rock Phosphate.

*Compulsory Field Training :*

1. Field work will be consisting of geological mapping of a selected area, visiting of various industrial, and engineering projects, mining sites and under-ground mapping of a metalliferous mines and reports thereon. Field work is compulsory, Failure to complete it unsatisfactorily shall entail detention,
2. Besides this the candidate shall have to carry out a geological project work of about three weeks duration.
3. Three months post-examination training, at a selected mine site, to be arranged by the Head of the Department, shall be compulsory for the award of degree.

FAILURE TO COMPLETE 1,2, shall entail detention and 3 in Non-award of Degree.

Total maximum marks including field reports and Project reports etc. 300 marks.

**Books Recommended for M.Sc. and M.Sc. (Tech) Applied Geology**

1. Structural Geology M.P. Billings (Prentice Hall).
2. An outline of Structural Geology, B.E. Hobbs; Means W.D. and William P.F. (J. Wiley and Sons).
3. Folding and Fracturing of Rocks. J.G. Ramsay. (Mc.Graw Hill).
4. Introduction to the structure of Earths crust E.W. Spencer, (Mc. Graw Hill).
5. Structural Geology. D.M. Ragan (J. Wiley and Sons).
6. Structural Geology for Exploration Geologists. P.C. Badgley (Oxford University Press).
7. An Introduction to Crystallography. F.C. Phillips (Oliver Boyd).
8. Elementary Crystallography M.J. Buerger (J. Wiley and Sons).
9. Crystal Chemistry R.C. Evans. (Cambridge University Press).
10. Principles of Invertebrate Palaeontology R.R. Schrock and Twenhofel, W.H. (MacGraw Hill).
11. Invertebrate Fossils R.C. Moore C.G. Lalicker, A.G. Fisher (MacGraw Hill).



12. Evolution of the vertebrates E.H. Colbert. (J. Wiley and Sons).
13. Stratigraphy and sedimentation by W.C. Krumbein and L.L. Sloss, (W.H. Freeman and Co.).
14. Principles of stratigraphy by C.O. Durbar a J. Rodgers. (John Wiley and Sons).
15. Geologic Time by Don L. Eicher (Prentice-Hall).
16. Geology of India and Burma. M.S. Krishnan (Higginbothams Madras).
17. A Manual of Geology of India and Burma E.H. Pascoe (G.S.I.)
18. The Geologic Systems-The Precambrian Vol. III Ed. K. Rankama (J. Wiley and Sons).
19. Physical Geology Authur Holmes (Nelson).
20. Dynamic Earth P.J. Wyllie (J. Wiley and Sons).
21. Optical Crystallography E.E. Whalstrom (J. Wile and Sons).
22. Introduction to Rock Forming Minerals W.A. Deer, R.A. Howie J. Zussman. (Longmans).
23. Petrology of Sedimentary Rocks. R.L. Folk (Hemphill Pub. Co. ).
24. Introduction to sedimentology. R.C. Selley (Academic Press).
25. Sedimentary Rocks. F.J. Petti John. (Harper).
26. Elements of Mining R.A. Lewis and G.A. Clark. (J. Wiley and Sons).
27. Mining Geology. H.E. MC Kinsty (Prentice Hall).
28. Courses in Geology R.N.P. Arogyaswami (I.B.H.)
29. Mining of Mineral Deposits. L. Sheryatkov. (Foreign Language Publishing House).
30. Examination and Evaluation of Mineral Property R.D. Parks. (Addison Wesley).
31. Mineral Economics R.K. Sinha, N.L. Sharma (I.B.H.).
32. Elements of Mining G.J. Young (McGraw Hill).
33. Ore Deposits C.F. Park, R.A. Mac Diarmid (W.H. Freeman).
34. Geology of Mineral Ddeposts V.I. Smirnov (MIR Moscow).
35. Economic Mineral Deposits A.M. Bateman (J. Willey and Sons).
36. Ore petrology. R.L. Stanton (McGraw Hill).
37. Metallic and Industrial Mineral depostis. C.C. Lamey.

38. Treatise on Industrial Minerals of India. R.K. Sinha.
39. Mineral Resources of India. Krishnaswamy
40. Igneous Petrology I.S.E. Carmichael; F.J. Turner and J. Vehroogen.
41. Evolution of Igneous Rocks N.L. Bowen. (Dover.)
42. Text book of Lithology J. Jackson.
43. Indian Palaeozoic Stratigraphy V.J. Gupta H.PC.
44. Indian Mesozoic Stratigraphy V.J. Gupta H.PC.
45. Indian Canozoic Stratigraphy V.J. Gupta H.PC.
46. Metamorphic Petrology F.J. Turner. (McGraw Hill).
47. Petrogenesis of Metamorphic Rocks. H.GF. Winkler (Springer Verlag).
48. Metamorphism and Metamorphic belts. A Miyashiro (George Allen Unwin).
49. Ground Water Hydrology, D.K. Todd (J. Wiley and Sons).
50. Ground Water, C.F. Tolman (McGraw Hill).
51. Principles of Engineering Geology and Geotectonics. D.P. Krymine and W.R. Judd. (McGraw Hill).
52. Geology in Engineering J.R. Schultz, A.B. Cleaves. (J. Wiley and Sons).
53. Igneous and Metomorphic Petrology. F.J. Turner and J. Vehroogen (McGraw Hill).
54. Geochemistry Krauskopt.

**Journal for General Study and Reference :**

1. Records, Memoirs, Economic Mineral Bulletins of various series of Geological Surveys of India, Calcutta.
2. Palaeontologia : All Series (Geological Survey of India, Calcutta Publication Division, Government of India, New Delhi).
3. Indian Minerals (Geological Survey of India, Calcutta).
4. Quarterly Journal and also Bulletins of the Geological Mining and Metallurgical Society of India.
5. Transactions Mining, Geological and Metallurgical Institute of India, 29, Chowringhee—Calcutta-16.
6. Journal of the Palaeontological Society of India (Geological Department, University of Lucknow).
7. Proceeding of the National Institute of Science of India, New Delhi.
8. News Letter—Oil and Natural Gas Commission (Government of India, Dehra Dun).

9. The Palaeobotanist (Birbal Sahni Institute of Palaeobotany, Lucknow).
  10. Geological Magazine.
  11. Journal of Petrology.
  12. Journal of Mining.
  13. Journal of Metals and Fuels.
  14. Economic Geology.
  15. Micropalaeontology.
  16. Journal of Palaeontology. (Society of Economic Palaeontologists and Mineralogists and Palaeontological Society, George Benta Publishing Co., Menasha Nis).
  17. Journal of Sedimentary Petrology.
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MINUTES OF THE SECOND SPECIAL MEETING OF THE  
BOARD OF STUDIES IN BOTANY, HELD ON 31ST, JULY,  
1979 AT 12.00 NOON IN THE UNIVERSITY OFFICE,  
JAIPUR.

Present :

1. Dr. P.N. Mathur
  2. Dr. P.L. Mittal
  3. Shri M.S.L. Gupta
  4. Dr. D. Singh
  5. Dr. S. Sharma
  6. Professor, B.L. Saraf—(Dean, Faculty of Science)
  7. Professor, B. Tiagi—(Convener)
- } Special invitee

1. With reference to Registrar's letter No. F. 7(7) Aca. I/Reg. 79/13916-22M dated 26-7-79, the Board reconsidered the Courses of Study and the number of papers to be offered, under the Annual Scheme of examination, by the M.Sc. previous and final M.Sc. Botany Students. The Board *resolved to recommend* the four paper scheme, each for the M.Sc. previous (1980, 1981) and M.Sc. Final (1981, 1982) examinations (*Vide Appendix-I*).

2. The Board considered the letter, received from Dr. Shiv Sharma, University Department of Botany, Jaipur regarding suggestions in the Syllabus for M.Sc. Botany, and resolved to include the Advances in Botany as a paper VIII in the annual scheme of examination.

*Convener*  
Board of Studies in Botany

## APPENDIX-I

## SCHEME OF EXAMINATION

## M.Sc. Examination

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-voce (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) at least 36% marks in practical (s) wherever prescribed at the examination, provided that if a candidate fails to secure at least 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination, Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	} of the aggregate marks taken together of the Previous and the Final Examinations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper (s)/Practical(s)/Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36% in the case of Practical) shall be taken into account in respect of such Paper(s)/Practical(s)/Dissertation/Viva Voce as are cleared after the expiry of the aforesaid period of three years: provided that, in case

where a candidate required more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examinations. Only such candidates shall be permitted to offer Dissertation/Field Work/Survey Report/Thesis in lieu of a paper as are regular students (Correspondence course students included) and have secured at least 55% marks in the aggregate of all the papers prescribed at the previous examination.

6. The Viva-voce test shall be held at the end of the Final Year of the Course. The Collegiate Candidates, the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed option to offer either Viva-voce or a paper in lieu thereof prescribed for the purpose.

### Scheme of Annual Examination in M.Sc., Botany

#### M.Sc. Previous:

There will be four papers in theory, each of 3 hours, duration, carrying 100 marks each, and a practical carrying 200 marks (10 percent marks are reserved for *Viva* and 15 percent for records). The practical examination will be of 10 hours duration, spread over two days.

Paper I —Algae and Fungi

Paper II —Angiosperms—Taxonomy and Morphology

Paper III—Plant Physiology and Biochemistry

Paper IV—Ecology, Plant Geography and Economic Botany.

#### M.Sc. Final:

There will be four papers in theory, each of 3 hours duration, carrying 100 marks each, and a practical carrying 200 marks (10 percent marks are reserved for *Viva* and 15 percent marks for records). The practical examination will be of 10 hours duration, spread over two days.

Paper V—Bryophyta, Pteridophyta and Gymnosperms

Paper VI—Cell and Molecular Biology, Genetics, Plant Breeding and Biostatistics.

Any group of the following papers VII and VIII.

Paper VII—Advanced Plant Pathology-I

Paper VIII Advanced Plant Pathology-II

Or

Paper VII Seed Technology

Paper VIII Seed Pathology

Or

Paper VII Environmental Biology

Paper VIII Arid Zone Ecology

Or

Paper VII Advanced Morphology of Angiosperms

Paper VIII Plant Morphogenesis

Or

Paper VII Herbarium Botany

Paper VIII Advances in Taxonomy.

**Paper I—Algae and Fungi***Section-A*

A systematic study of the structure, reproduction, evolution and interrelationship of the typical representatives of the Principal groups of the Algae, with special reference to the following :

**1. Chlorophyceae :**

Chlamydomonas, Pandorina, Eudorina, Volvox, Tetraspora, Ecballocystis, Chlorella, Chlorochytrium, Hydrodictyon, Scenedesmus, Pediastrum, Microspora, Ulva, Sphaeroplea, Cladophora, Pithophora, Chaetophora, Draparnaldiopsis, Stigeoclonium, Trentepohlia, Cephaluros, Coleochaete, Oedogonium, Sirogonium, Zygnema, Mougeotia, Closterium, Protosiphon, Cosmarium, Bryopsis, Caulerpa, Acetabularia, Valonia, Chara, Nitella.

**2. Xanthophyceae :**

Tribonema, Botrydium, Vaucheria.

**Cyanophyceae :**

Gleocapsa, Microcystis, Spirulina, Lyngbya, Anabaena, Nostoc, Rivularia, Gleotrichia, Scytonema, Stigonema

**Bacillariophyceae & Chrysophyceae : A general account.****3. Phaeophyceae :**

Ectocarpus, Cutleria, Laminaria, Dictyota, Sargassum, Fucus.

**4. Rhodophyceae :**

Porphyra, Nemalion, Batrachospermum, Gelidium, Corallina, Cryptosiphonia, Rhodymenia, Polysiphonia, Callithamnion.

5. Alternation of generations, sex and nature of sexuality, economic importance of the algae. Culture of algae; isolation, purification and growth.

*Books for study :*

1. I.C.A.R. Symposium on Algology, New Delhi.
2. Chapman, V.J. Algae, Macmillan,
3. Chapman V.J. The Sea Weeds, Methuen.
4. Desikachary, T.V. Cyanophyta, I.C.A.R., New Delhi.
5. Fritsch, F.E. Structure and Reproduction of the Algae Vol. I, II, Cambridge University Press.
6. Precott. C.W. The algae—a review, Nelson,
7. Randhawa, M.S. Zygnemaceae, I.C.A.R., New Delhi.
8. Smith, G.M. Cryptogamic Botany Vol. I, Mc-Graw Hill, New York.
9. Smith G.M. Manual of Phycology, Chron, Botanica Waltham Mass, U.S.A.
10. Smith, G.M. Freshwater Algae of the U.S.A. Mc-Graw Hill, New York.
11. Tiffaney, H. Algae. (Charles Thomas).
12. Tiden, J.E. The algae and their life relations. University of Minnesota Press.
13. Venkataraman, G.S. Vaucheriaceae, I.C.A.R., New Delhi

### Section-‘B’

A systematic study of the general characters, occurrence, symptoms, structure, reproduction and inter-relationships of the main groups of the fungi with special reference to the following orders and their typical representatives :

- |                  |  |
|------------------|--|
| 1. Chytridales   | Synchytrium,   |
| Blastocladales   | Allomyces,   |
| Saprolegniales   | Saprolegnia, Achlya, Dictyuchus,   |
| Peronosporales   | Pythium, Phytophthora, Peronospora, Sele-<br>rospora, Plasmopara,          |
| Mucorales        | Rhizopus, Mucor, Pilobolus, Zygerhynchus,                                  |
|                  | Choanephora, Syncephalastrum, Saksenaea.                                   |
| Entomophthorales | Basidiobolus, Entomophthora,   |
| 2. Endomycetales | Schizosaccharomyces,   |
|                  | Saccharomyces,   |
| Taphrinales      | Taphrina, Protomyces,  |
| Erysiphales      | Erysiphe, Uncinula, Phyllactinia Spaerotheea<br>Podosphaera, Microsphaera. |



Eurotiales	Gymnoascus, Aspergillus, Penicillium.
Sphaeriales	Neurospora, Sordaria, Xylaria,
Hypocerales	Nectria.
Clavicipitales	Claviceps.
Pezizales	Pyronema, Peziza, Morchella.
Helotiales	Rhytisma.
Tuberales	Tuber.
Myriangiales	Elsinoe.
Dothideales	Mycosphaerella.
Pleasporales	Venturia.
3. Ustilaginales	Ustilago, Sphacelotheca, Tolyposporium, Urocystis, Tilletia, Nevossia.
Uredinales	Puccinia, Uromyces, Melampsora, Phrag- midium, Ravenelia.
Agaricales	Agaricus.
Clavariales	Clavaria.
Tulasnellales	Auricularia, Dacrymyces, Tremella.
Lycoperdales	Lycoperdon, Geastrum.
Nidulariales	Cyathus.
Phallales	Phallus.
Polyporals	Polyporus.
4. Monililiales	Fusarium, Alternaria, Drechslera, (Helminthosporium). Cercospora.
Melanconiales	Colletotrichum.
Sphaeropsidales	Phyllosticta.
Mycelia Steridia	Rhizoctonia.

A brief history of Mycology and Plant Pathology with reference to India. Plant pathogenic bacteria and viruses and Symptoms of diseases caused by them. Nature and Transmission of virus. Root knot (*Meloidogyne* of Vegetables).

A general knowledge of heterothallism, heterokaryosis, parasexuality and sexuality

A brief systematic and general account and economic importance of Lichens.

#### *Books for study :*

1. Ainsworth, G.C. and Bishby, Dictionary of Fungi C.M.I.
2. Alexopoulos C.J., An introduction to Mycology, John, Wiley
3. Bessey, C.E Morphology and Taxonomy of Fungi, Blakiston
4. Clements F.E. and Shear C.L. Genera of Fungi, W.H. Wilson & Co., New York.
5. Gaumann. E.A. The Fungi, Hafner.
6. Gaumann, E.A. and Dodge C.W., Comparative morphology of the fungi, Mc-Graw Hill.

7. Mundkur, B.B., Fungi and Diseases in Plants, Macmillian.
8. Webster, John, Introduction to Fungi, Cambridge University Press.
9. Gray, William D.M. The relation of Fungi to human affairs. Henry Holt & Co.
10. Smith G., An Introduction to Industrial Mycology, Edward Arnold Ltd.

Paper-II : Angiosperm—Taxonomy and Morphology

*Section-'A'*

1. Outlines of history of plant taxonomy with special reference to :

- (a) Land-marks in the development of concept of plant taxonomy (Pre-Linnean era)
- (b) Various schemes of classifications upto 1859, (Pre-Darwinian era)

2. Principles of Taxonomy & Post-Darwinian systems of the classification: Engler, Bessey, Hutchinson, Cronquist, Takhtajan and Thorne.

3. Scope of plant Taxonomy: How and where a taxonomist works: Field; Herbarium and Museum; Laboratory; Garden and Green-Houses; Library.

- (b) Synthesis of data from related branches of Life Sciences—Modern tools of taxonomy.
- (c) Documentation : Flora, Monograph and Icones; nomenclature—important rules of.

4. History of taxonomy in India ; the Botanical Survey of India; Important Botanical garden and Herbaria of India.

5. Fossil History and Phylogeny of Angiosperms: Origin and evolution of the Dicots. and Monocots.

Phylogeny and floral evolution in "Ammentiferae", Ranales, Centrospermales, Tubiflorae, Helobiales.

6. Study of some selected families of Angiosperms: Cucurbitaceae, Lemnaceae, Orchidaceae, Podostemaceae. Cactaceae, Umbelliferae, Asteraceae, and Araceae.

- (a) Families of Heterotrophic Angiosperms (parasitic, saprophytic and insectivorous).
- (b) Locally occurring families (to be studied in practical classes only).

*Books for study :*

1. Bailey, L.H. Manual of cultivated plants. Macmillan & Co.
2. Benson L., Plant Classification. D.C. Heath & Co. Boston.
3. Core, E.L., Plant Taxonomy, Prentice Hall.
4. Cooke, T. Flora of the Presidency of Bombay, B.S.I. Calcutta.
5. Cronquist, A. The evolution and classification of flowering plants.
6. Davis P.P. and V.H. Heywood, Principles of Angiosperm, Taxonomy. Oliver & Boyd.
7. Duthie J.F. Flora of the upper Gangetic Plain. B.S.I, Calcutta
8. Good G.R. Features of Evolution in the flowering Plants, Longmans Green & Co., New York.
9. Gunderson, A. Families of Dicots. Waltham, Mass.
10. Hutchinson, J. 1969. Evolution and Phylogeny of flowering plants. Academic Press, London.
11. Hutchinson, J. Families of Flowering Plants, Oxford.
- x2. Lawrence, G.H.M. Taxonomy of Vascular Plants, Mac-Millan, New York.
13. Porter, C.L. Taxonomy of Flowering Plants. W.H. Freeman & Co.
14. Rendle, A.B. The Classification of Flowering Plants, C.U.P.
15. Takhtajan, A. Flowering Plants, Origin & dispersal—English Translation by Jeffrey. C. Oliver & Boyd, London.
16. Wills, J.C.A Dictionary of the Flowering Plants and Ferns. C.U.P.

*Section—B*

1. Organisation of shoot and root apices with brief reference to various theories.

The concept of transfer cells. Vascular cambium and its derivatives, Structure of wood and its taxonomic significance. Anatomy of internode, node and its evolutionary significance.

Anatomy of leaf : stomatal types, epidermal structures and their taxonomic significance.

2. Floral anatomy with reference to simple dicot and monocot flowers. Some ideas about variation due to cohesion and adhesion of floral parts, vasculature in superior and inferior ovary conditions with one example of appendicular and receptacular types : taxonomic significance of flora anatomy.
3. Morphology of the flower and its organs with special reference to stamen and carpel.

Placentation, basic types and inter-relationship among them.

4. Major landmarks and future scope of embryology.  
Anther, microsporogenesis and male gametophyte,  
Pollen, structural characteristics, significance of palynology.

Ovule, megasporogenesis.

Embryosac : development : organisation of basic types.  
Fertilization, pollen tube structure and growth, barriers to fertilization and methods of overcoming them.

Endosperm, development types.

5. Apomixis, Embryo development, embryonal types, Dicot and monocot embryos :  
Polyembryony, natural and induced, importance seed structure and development in dicots, culture of anther, ovule, ovary embryo and production of adventive embryos. Role of growth Substances, parthenocarpy—natural & induced.

*Books for study :*

1. Arber, A. Monocots—a morphological study (C.U.P.).
2. Bailey, L.H., Manual of cultivated plants, MacMillan.
3. Coulter, J.M., and Chamberlain, C.J. Morphology of the Angiosperms. Chicago.
4. Cronquist, A. The evolution and classification of flowering plants. Nelson.
5. Eames, A.J. Morphology of the Angiosperms, McGraw Hill, New York.
6. Eames, A.J. & Mac-Daniels, L.H. An introduction to plant anatomy, John Wiley.
7. Esau, K. : Plant anatomy, John Wiley.
8. Esau, K. : Anatomy of Seed plants; John Wiley.
9. Fahn, A. Plant Anatomy, II ed., Pergamon Press, Oxford.
10. Foster, A.S. & Gifford E.M. : Comparative Morphology of the vascular plants.
11. Foster, A.S. Practical Plant Anatomy. D. Van Nostrands & Co., Inc., New York.
12. Good G.R. Features of evolution in the flowering plants, Longmans Green & Co., New York.
13. Johansen, D.A. Plant Embryology. Chronica Botanica, Waltham mass.
14. Johri, B.M. Comparative Embryology of the Angiosperms. Delhi University. Indian National Science Academy, No.41, New Delhi.

15. Johri B.M. *et. al.* Morphology, Anatomy and Embryology of land plants (seminar), Delhi University, 1969.
16. Maheshwari, P. An Introduction to the Embryology of Angiosperms, Mc-Graw Hill.
17. Maheshwari, P. (Ed.) Recent Advances in the Embryology of the Angiosperms. Delhi University.
18. Maheshwari, P. (Ed.) Plant Embryology—a symposium of C.S.I.R., Delhi.
19. Maheshwari, P. (Ed.) Plant Tissue and Organ Culture, Delhi.
20. Metcalfe, C.R. ; Chalk L. : Anatomy of Dicots, Vols. I, II, Oxford.
21. Takhtjan A. Flowering Plants, Origin & Dispersal (Translated by C. Jeffray) Oliver and Boyd. 1969.
22. Wardlaw, C.W. Embyogenesis in Plants, Methuen, London.
23. Wills, J.C. 1957 : Dictionary of the flowering plants and ferns Cambridge. (revised Airy Shaw).

### Paper III—Plant Physiology and Biochemistry :

1. Water Relations :—Cell wall and membrane, its structure and function, Properties of solutions, diffusion, osmosis and permeability. Osmotic relations of cell.
2. Root system as the organ of absorption and translocation of water—including mechanism and factors affecting them. Root pressure. Transpiration, mechanism and significance. Stomatal apparatus in relation to transpiration.
3. Mineral Nutrition :—Mineral requirements of plants, their source and form in which they are absorbed, deficiency and toxicity symptoms of minerals. Hydroponics, foliar application of inorganic nutrients.  
Absorption of ions from the soil, mechanism and factors controlling their diffusion. Uptake and translocation of inorganic ions.
4. Photosynthesis—Fine structure and development of the photosynthetic apparatus, pigments related to photosynthesis, their structures, synthesis and properties accessory pigments—both water soluble and water insoluble. Photophosphorylation—Path of carbon in photosynthesis. Factors controlling the mechanism, chemosynthesis in bacteria.
5. Respiration—Path of Carbon in respiratory metabolism. Oxidative Phosphorylation. Electron transport system in relation to the structure of mitochondria.

6. Carbohydrate metabolism : classification of mono, oligo and polysaccharides, inter-conversion, and their synthesis  
Lipids—Fa<sup>+</sup> and fatty acid metabolism, Elementary Chemistry of fats.
7. Nitrogen metabolism and Protein synthesis—Source of nitrogen, nitrogen fixation, and formation of amino-acids, Elementary chemistry of proteins and their synthesis.
8. Enzymes—Properties and function, mechanism of their action, classificatoin and role in plant mitabolism.  
Intermediary metabolism and synthesis of secondary products. (Tannins, Resins, Sterols, Alkaloids).
9. Plant growth through different phases, dynamics of growth process, growth, senescence.  
Growth regulatory substance, Viz., Auxins Gibbrellins, abscisic acid Ethylene and vitamins, their discovery, structure, Bio-assays and role in plant growth and metabolism. Role of growth substances in horticulture and agriculture.
10. Growth Movements ; Physiology of flowering--photo-periodism, Vernalisation; physiology of seed and bud dormancy, germination.

*Books for study :*

1. Annual Review of plant Physiology, Ann. Rev. Inc., California.
2. Black, C.A. Soil—plant relationship, John, Wiley.
3. Briggs, G.E. Movements of water in plants, Blackwell, London.
4. Cooke, C.W. The Control of soil fertility E.L.B.S.
5. Fried. M. etc. The soil-plant system. Academic Press.
6. Jennings, D.H. The Absorption of solutes by plant cells, Iowa State University Press.
7. Kramer, P.J. Plant and soil water relationships, Mc. Graw Hill.
8. Mayer, A.M. and A. Poljakoff--Mayber--The germination of seed, Pergamon Press, Oxford.
9. Richardson, M. Translocation in Plant, Edward Arnold.
10. Regers, H.J. etc. Cell walls and Membrances, E. & F.N.
11. Ruhland, W. Encyclopaedia of Plant Physiology. Springer Verlag, Berlin.
12. Slatyer, R.O. Plant-water relationships, Academic Press.

13. Steward, F.C. Plant Physiology Vols. 1-6. Academic Press.
14. Audus, L.J. Plant growth substances, Leonard Hill Book Ltd.
15. Leopold, A.C. Auxins and plant growth, Berkley & Los Angeles
16. Baldwin, Dynamic aspects of Biochemistry. Cambridge University Press.
17. Bonner, S. & Galston, A.W. Principles of Plant Physiology, W.H. Freeman & Co.
18. Bonner, J. & Varner, J.E. Plant Biochemistry., Academic Press.
19. Borne, G.H. Cytology and cell physiology, Clarendon Press.
20. Dickson, M. & Webb. E.C. Enzymes, Academic Press.
21. Deby, Plant Biochemistry, John Wiley.
22. Devlin & others, Plant Physiology, D. Van Nostrand Reinhold.
23. Hill, R. and Wittingham, C.P. Photosynthesis, Methuen's Monograph.
24. James, W.O. Plant Respiration, Oxford, London.
25. Levitt, J. Plant Physiology, Prentice Hall, New York.
26. Wilkins, M.B. Physiology of Plant Growth and Development

Paper IV—Ecology, Plant Geography and Economic Botany :

*Section—A*

1. Basic Principles of Ecology, its Scope and relationship with other Sciences, brief history of ecology.
2. Concept of environment : environmental factors and their measurement—Climatic, edaphic, biotic & Physiographic. Comparison of environment on land, fresh & marine water; a study of soil, its development, maturation and classification, soil types of India.
3. Effect of environmental factors on growth and reproduction of plants. Population characteristics and interactions and gene ecology.
4. Organisation, structure and classification of plant community, Continuum, community dynamics Concept of ecosystem, Structure, function, productivity of various ecosystems.
5. Applications of ecology in agriculture, forestry, soil and water conservation; air, water and soil pollution.  
Principles of plant Geography, area, dispersal, migration. botanical regions of the world, Vegetation types of India.

*Books for study :*

1. Clements, F.E. Plant succession and indicators. (W.H. Wilson Co., New York).
2. Clements F.E. Dynamic of vegetation. W.H. Wilson Co., New York.
3. Conard H.S. : Plant Ecology. Iowa-State Press, Iowa.
4. Daubenmire, R.F. : Plant and Environment. John Wiley, New York.
5. Dice, L.R. : Natural Communities. Univ. Michigan Press.
6. Fuller, G.D. and Conard, H.S. : Plant Sociology, Mc-Graw Hill.
7. Good R. Plant Geography. Longmans, London.
8. Kramer, P.J. 1949 : Plant and Soil Water Relationship, Mc-Graw Hill.
9. Mayer, A.M. and Poljakoff-Mayber. The germination of Seeds. II ed, Pergamon Press, Oxford.
10. Mclean, R.C. & Cook, I, 1950 : Practical Field Ecology, Allen and Unwin Ltd., London.
11. Misra, R. Ecology work book, Oxford, New Delhi.
12. Oostnings, H.J. 1958 : Study of Plant Communities : An Introduction to Plant Ecology, W.H. Freeman & Co., San-fransisco.
13. Polunin, N. : Plant Geography. Longmans.
14. Schimper, A.F.W. 1963 : Plant Geography. Oxford Clarendon Press.
15. Tansley, A.G. 1946, Practical Plant Ecology—Allen and, Unwin Ltd., London.
16. Tansley, A.G. 1946 : Introduction to Plant Ecology, Allen & Unwin Ltd., London.
17. Warming F. 1925 : Ecology of Plants, Oxford University Press
18. Weaver, J.E. & Clements, F.E. 1929 : Plant Ecology, Mc-Graw Hill.
19. Woodbury, A.M. 1934 : Principles of General Ecology. The Blackiston Co., Inc., New York.

## Section-'B'

A general account of the origin of cultivated plants, A study of the origin, distribution, products and improvement of the following crops :—

1. Cereals : *Triticum*, *Oryza*, *Zea* and *Pennisetum*,
2. Starches and Sugars : *Solanum tuberosum*, *Manihot*, *Saccharum*, *Beta*, *Phoenix*.



3. Fibre plants : *Gossypium*, *Corchorus*, *Linum*, *Hibiscus*.
4. Oils and fats : *Brassica*, *Sesamum*, *Arachis*, *Linum*.,, *Ricinus*, *Cocos*, *Helianthus*, *Gossypium*.
5. A general account of the following :—  
 Legumes : Pulses and forage legumes.  
 Spices : Coriander, Foeniculum, Cumin, Trachyspermum, Ferula, Zingiber, Curcuma, Mentha, Syzygium, Piper, Capsicum, Trigonella.  
 Essential oils : Essential oils, perfumes, camphor.  
 Tans, Dyes and pigments.  
 Gums and resins : gum arabic, amber, lacquer, shellac, Canadabalsam.  
 Insecticides : Pyrethrum, Derris, and chrysanthemum cinerariaefolium.  
 Rubber : Sources, Hevea.  
 Beverages : Coffee, Tea, Theobroma.  
 Drugs and Narcotics : Papaver, Cannabis, Nicotiana, Aconitum, Podophyllum, Cinchona, Atropa, Digitalis, Rauwolfia, Artemisia, Hyoscyamus, Hydnocarpus, Ephedra.
6. Wood, Classification, mechanical properties, Structure, and diagnostic features of important Indian Timbers (Tectona, Shorea, Pinus, Cedrus, Dalbergia, Juglans, Salmalia)
7. Paper : raw materials—wood, fibres, pulp, bamboo and grasses. Paper manufacture.
8. Fruits and Vegetables (in practical class only).

*Books for reference :*

1. Chopra, R.N. etc. : Indigenous Drugs of India. Calcutta.
2. Chopra, R.N. etc. : Poisonous Plants of India., I.C.A.R., Delhi.
3. Cobby, L.S. : An Introduction to the Botany of Tropical Plants. Longmans.
4. De Candolle, A. : Origin of Cultivated Plants, London.
5. C.S.I.R. : The Wealth of India, New Delhi.
6. Dustur, J.F. : Medicinal Plants of India, Bombay.
7. Dustur, J.F. : Useful Plants of India & Pakistan., Bombay.
8. Hill, A.F., Economic Botany, Mc Graw.
9. Hutchinson J. and Melville. R. : The Story of Plants and their uses to Man.

10. Macmillan, H.F. : Tropical Plants and Gardening.
11. Nicholls, H.A. and Holland, J.H. : A text book of Tropical Agriculture, London.
12. Schery, R.W. : Plants for Man : Allen and Unwin, London.,
13. Vavilov, N.I. : Origin and evolution of cultivated Plants, Waltham Mass.
14. Uphoff, J.C. Th : The Dictionary of Economic Plants, Berlin.

Paper V—Bryophyta, Pteridophyta and Gymnosperms.

1. Hepaticae :

A systematic study of the structure, reproduction, evolution and interrelationship of the typical representative of principal groups of Bryophyta, with special reference to the following :

*Sphaerocarpus*, *Riccia*, *Targionia*, *Cyathodium*, *Monoclea*, *Marchantia*, *Plagiochasma*, *Riccardia*, *Pellia*, *Methotheca*, *Calobryum*., *Takakia*.

2. Anthocerotac :

*Anthoceros* genus complex and *Notothylus*.

Music :

*Sphagnum*, *Andraea*, *Polytrichum*, *Phy-scomitrium*, *Buxbaumia*, *Minimum* and *Pogonatum*.

Ecology, Physiology and Culture of Bryophyta.

Distribution of Bryophyta in India.

3. A systematic study of the distribution (present and past with special reference to India), structure, reproduction, evolution and inter-relationship of the typical representatives of the principal groups of the pteridophyta with special reference to the following :

(a) *Psilophytopsida* :

Psilophytales—Asteroxylon.

(b) *Psilotopsida* :

Psilotales—Psilotum, Tmesipteris

(c) *Lycopsidea* :

Protolepidodendrales—Baragwanathia.

Lycopodiales—Lycopodium, Phylloglossum.

Lepidodendrales—Lepidodendron.

Isoetales—Isoetes.

Selaginellales—Selaginella,

(d) *Sphanopsida* :

Hyeniales—Calamophyton.

Sphenophyllales—Sphenophyllum, Cheirostrobus.

Calamitales—Calamites,

Equisetales—Equisetum.

(e) *Pteropsida* :

( i ) Pimofilices —Protopteridium.

Botryopteris

Archaeopteris.

( ii ) Eusporangiatæ :

Ophioglossales—Ophioglossum, Botrychium,

(iii) Marattiales—Angiopteris Marattia.

(iv) Osmundales—Osmunda.

( v ) Leptosporangiatæ :

Filicales —Lygodium, Gleichenia,

—Hymenophyllum, Cyathea, Cera-  
topteris.Identification of the more impor-  
tant tribes of the family Polypo-  
diaceae (Sensu lato).

Marsileales—Marsilea, Regnellidium, Pilularia

Salviniales—Salvinia, Azolla.

4. Origin and evolution of vascular land plant; telome, theory, heterospory and seed habit; evolution of stelar system; cytology and the study of prothallus in relation to taxonomy; sporophyll evolution, Alternation of generations—apogamy, apospory and parthenogenesis, experimental studies having a bearing upon these phenomena.
5. A study of structure, life history and interrelationships of principal groups of gymnosperms with special reference to the following :

*Pteridosperms* : Lyginopteris, Heterangium, Medullosa, Trigonocarpus and Glossopteris.

Cycadales

A general Account.

6. Caytoniales
- Nilssoniales
- Bennettitales
- Pentoxylales
- Cordaitales
- Ginkgoales

Caytonia

*Nilssonia*, *Androstrobus*,*Williamsonia*, *Cycadeoidea*.

General Account.

*Cordaites*.*Ginkgo*.

7. Coniferales : A study of the following families with their principal genera, Comparative study of structure, life history and inter-relationships.
  - (a) Voltziaceae.
  - (b) Pinaceae.
  - (c) Araucariaceae.
  - (d) Taxodiaceae.
  - (e) Cupressaceae.
  - (f) Podocarpaceae.
  - (g) Cephalotaxaceae.
  - (h) Taxaceae.
8. Ephederales                      *Ephedra*.  
 Welwitschiales                *Welwitschia*.  
 Gnetales                         *Gnetum*.
9. Economic importance of the gymnosperms.  
 Fossilization—process, types of fossils, and methods of study, Present and Past distribution of Gymnosperms with special reference to India.

*Books for study :*

1. Bower, F.O. Primitive Land Plants, Mac-Millan.
2. Cambbell D.H. The evolution of Land Plants, (Embryophyta). Stanford University Press.
3. Campbell, D.H. The structure and Development of the mosses and ferns, New York.
4. Cavers, F. The Interrelationships of the Bryophyta. New Phyto. Reprint No. 4.
5. Kashyap. S.R. Liverworts of the Western Himalayas, University Press, Lahore.
6. Smith, G.M. Cryptogamic Botany. Vol. I Mc Graw Hill.
7. Verdoon, W.L. Manual of Bryology Chron. Bot.
8. Bower, F.O. The Ferns (Filicales) 3 Vols. C.U.P.
9. Copeland, E.B. Genera Filicum, Chron, Botanica.
10. Eames A.J. Morphology of Vascular Plants (lower groups) Mc Graw Hill.
11. Foster. A.S., Gifford, E.M. Morphology of Vascular Plants, Allied Pacific.
12. Manton. J. Problems of Cytology and Evolution in the Pteridophyta. C.U.P.
13. Scott, D.H. Studies in Fossil Botany. Vol II. Blakiston, London.
14. K.R. Sporne. The Morphology of Pteridophytes, Hutchinson.

15. Verdoon, W.L. Manual of Pteridology. Chronica Botanica.

*Books for study :*

1. Andrews H.N. Ancient plants and the world they lived in. Cosmstock, Ithaca.
2. Arnold, C.A. An Introduction to palaeobotany, Mc-Graw Hill Book Co., New York.
3. Bower, F.O. The Ferns (Filicales. 3 Vols. University Press Cambridge.
4. Chamberlain, C.J. 1935, Gymnosperms, Structure and evolution, Chicago.
5. Chamberlain, C.J. The living cycads.
6. Coulter, J.M. and Chamberlain, C.J. : Morphology of the Gymnosperms, Chicago.
7. Darrah, W.C. 1939 : Principles of Palaeobotany. Chronica Botanica.
8. Dallimore W. and Jackson, A.B. : Hand Book of Coniferae. St. Ames. Press, England.
9. Delevoryas, T. Morphology and Evolution of Fossil Plants.
10. Eames, A.J. 1939 : Morphology of vascular Plants, Lower Groups, Mc-Graw Hill.
11. Foster, A.S. and Gifford, F.M. Morphology of Vascular Plants. Allied Pacific.
12. Greguss, P. : Identification of living gymnosperms on the basis of xylotomy. Academial Kaido. Budapest.
13. Pearson, H.H.W. Gnetales, Cambridge.
14. Seward, A.C. Fossil Plants, 4 Vols. University Press, Cambridge.
15. Seward. A.C. 1931 : Plant life through the ages, University Press, Cambridge.
16. D.H. Scott : Studies in fossil botany, Vol. II. London.
17. Walton, J. 1940 : An introduction to the Study of Fossil Plants, London.

**Paper VI. Cell and Molecular Biology, Genetics, Plant Breeding and Biostastics.**

1. Cell Diversification and Exceptions to-cell theory. Cell wall; cell memberance.

*Cell cycle, Mechanism of chromosome, movement. Chiasma and crossing over, Linkage and mapping of genes: Synaptinimal Complex.*

2. Ultrastructure of nuclens; Fine structure and chemistry of chromosomes, polytene and lambrush chromosmes, and super-numerary chromomsomes.

Structural changes in chromosomes—deletion, duplication, inversion. and translocation.

3. Chemistry of nucleic acids. Structure and kinds of D.N.A. Replication of D.N.A. in cell free systems and in the chromosomes.

Structure and types of R.N.A. Biosynthesis of R.N.A. in general and in relation of the genetic coding.

4. Molecular mechanism of mutation with special reference to micro-Organism, recombinations. transformations, transduction, sexduction. and i ntragenic recombination.

Genetic code. Regulatory mechanism in bacteria and complex organisms.

5. Present status and future scope of molecular biology. Chemical evlution and origin of cell.

1. Introduction and recapitulation of Mendel's laws. Incomplete dominance and lethal factors.

Interactions of factors : important modifications of  $F_2$  ratios.

Polygenic inheritance. Multiple allelism, pseudoalleles, self sterility of genes. Elementary Knowledge of blood groups in human being-ABO and MN-series.

2. Extrachromosomal inheritance.

Polyplloid-types. characteristics and artificail induction.

Mutations—natural and induced, types of Mutagens. Methods of detection and mechanism of induction.

3. Sex determination —type and mechanism. Inheritance of sex-linked and sex-limited characters.

Nature and concept of gene. Methods of analysing gene action with a brief account of Neurospora genetics.

Reproduction in relation to plant breeding and plant breeding techniques. Prniciples of inbreeding and outbreeding.

Methods of crop improvement—selection (mass, pureline and clonal), Hybridization—a comparative study of the different hybridization methods. Plant introduction and acclimatization.

Interspecific and intergeneric hybridization. Barriers to crossability and methods to overcome them.

Special breeding methods, Heterosis—effect, techniques, causes, achievements and limitation. use of male Sterility in hybrid seed production. Hybrid varieties synthetics and composites. Polyploidy and mutation breeding. Breeding for disease resistance.

Seed production—production of hybrid seeds and seeds of other improved varieties of important self-and cross pollinated crops. Processing of seeds—harvesting, drying, cleaning and storage. Testing of seeds for purity, moisture content, and germinability. Seed certification.

Elementary statistical methods, biometry and experimental designs. Probability and randomization, random sampling. The normal distribution curve, graphs, equations; correlation and enumeration. The chi-square analysis. The F. test and the analysis of Variance.

#### *Books for Study :*

1. Allen, J.M. Molecular Organisation and Biological Function. Harper and Row, New York.
2. Anfinsen, C.B. The Molecular Basis of Evolution, John Willey, New York,
3. Bedle, G.W. & M. Bedle, The Language of life—an Introduction to the Science of Genetics.
4. Bernal, El The origin of Life, Nelson, London.
5. Borek, E. The code of life, Columbia University Press, New York.
6. Butler, J.A.V. Gene Control in the living Cell, Allen and Unwin, New York.
7. Calvin, M. Chemical Evolution, Oxford University Press,
8. Cohn. N.S. Elements of Cytology. Harcourt Brace & World, New York.
9. Dalton, R. & F. Hagnenan. The membranes. Academic Press.
10. De Robertis, E.D.P., W.W. Nowinski, and F.A., Salz, Cell Biology, Saunders, Philadelphia.
11. Du Praw, E.J. Cell Molecular Biology. Academic Press, New York.
12. Fawcett. D.W. The Cell, W.B. Saunders Co., Philadelphia.

13. Fincham, J.R.S. and Day. P.R. Fungal Genetics, Blackwell, Oxford.
14. Fraenkel-Conrat, H. Molecular Basis of Virology. Reinhold Book Co.
15. Frey-Wyrsling. A. & K.—Molecular ultra structural Plant Cytology. American Eisevior, New York.
16. Fox, S.W. The origin of Pre-biological systems and their Molecular Structure. Academic Press, New York.
17. Freeman, J.A. Cellular Fine Structure. Mc Graw Hill Book Co.
18. Harris, H. Nucleus and cytoplasm. Oxford University Press.
19. Hayes, W. The Genetics of Bacteria and their Viruses, John Willey, New York.
20. Hamilton, J.H. Process and Pattern in Evolution. Mac-Millan, New York.
21. Herskowitz, I.H. Basic Principles of Molecular Genetics, Little Brown & Co. Boston Mass.
22. Higgs, G.H., D. Michie, A.R. Mur, K.B. Roberts, & P.M.B. Walker. Introduction of Molecular Biology. Longman Green & Co. London.
23. Jacob. F. & E.L. Wollman. Sexuality and Genetics of the Bacteria. Academic Press, New York.
24. Kihilman, B.A. 1966. Actions of Chemicals on dividing cells. Prentice Hall, Englewood Cliffs, N.J.
25. Krik, J.T.C. & Tilney Bessett R.A.F. The plastids, W.H., Freeman & Co., San Fransisco.
26. Lea, D.E. 1955. Actions of Radiations on Living Cells, C.U.P
27. Lima-de-Faria, Molecular Cytology.
28. Loveless, A. Genetics and Allied Effects of Alkyating agents, Pennsylvania State, University Press, University Park, Pa.
29. Loewy, A.G. & P. Siekruvitz, Cell structure and Function. Holt. Rinehart & Winston, New York.
30. Oparin, the origin of Life on Earth. Dover, New York.
31. Pauling, L.&R. Hayward. The Architecture of Molecules. W.A. Freeman & Co., Sanfransisco.
32. Potter, Van, R. D.N.A. Model Kit. Burgess Public Co., Minneopolis, Minn.
33. Rosenrbeg, E. Cell and Molecular Biology—an appreciation. Holt, Rinehart and Winston, New York.



34. Scientific American : Readings in the Life Sciences. Vol I —VII Science American Resource Library. W.H. Freeman & Co., R.L. San Fransisco.
35. Sinsheimer, R.L. The book of Life—Addison-Wisley Publ. Co. Readings Mass.
36. Stein, W.D. The movement of molecules across cell membrances. Academic Press, New York.
37. Swanson, C.P. Cytology and Cytogenetics. Oxford & I.B.H.
38. Taylor, H. Molecular Genetics. Academic Press, New York.
39. Toner, P.G. & Carr, K.E. Cell Structure. Willians and Wilkins Co., Baltimore.
40. Waston, J.D. Molecular Biology of the Gene. W.A. Benjamin, New York.
41. Waston J.D. The Double Helix. Alteneum, New York.
42. Allard, R.W. : Principles of Plant Breeding.
43. Anderson, Edgar, Introgressive Hybridization, John Wiley and Sons, Inc., New York.
44. Chandrasekharan, S.N. : Parthasarthy, S.V. and Krishnamurthy : Cytogenetics and Plant Breeding, Madras.
45. Cowen, J.W. : Heterosis; Iowa State College Press Iowa.
46. Dobzhansky, T.S. : Genetics and the origin of species, Columbia University Press, New York.
47. Dunn L.G. : Genetics in the 20th Century. Mac Millan Co.
48. Gardner, E.J. : Principles of Genetics. John Wiley.
49. Goldschmidt, R.B. : Understanding Heredity. John Wiley and Sons. Inc., New York.
50. Hayes, H.K., Immer F.R. and Smith D.C. Method of Plant Breeding, Mc-Graw Hill.
51. Haldane, J.B.S. : Biochemistry of Genetics. George Allen Uniwn Ltd., London.
52. Huxley, J. Hardy, A.C. and Found, E.B. : Evolution as a process, George Allen & Unwin, Ltd., London.
53. Kalmus, H. : Variation and Heredity, London.
54. Kempthorne, O. 1906 : Biometrical Genetics.
55. Muntzing, A : Genetics Research, Forlong Stockhom Sweden.
56. Railey, H.P. : Cytogenetics, New York.
57. Sinnott, E.W. Dunn, .L.C. and Dobzhansky, T., Principles of Genetics. Mc-Graw Hill Book Co., New York.

58. Singleton, W.R. : Elements of Genetics. Indian ed.
59. Stebbins, G.L. : Variation and Evolution in Plants, Columbia University Press, New York.
60. Cochran and Cox : Experimental designs.
62. Panse & Sukhatme—Statistics in relation to agriculture.
62. Snedecor—Statistical methods. F
63. Lewas, A.E. : Biostatistics. Affiliated East-West, New Delhi
64. Stebbins, G.L. : Variation and evolution in Plants, Indian ed.
65. Sturtavant, A.H. : A History of Genetics, Harper, Indian ed.
66. Swanson, Carl P : Cytology and Cytogenetics. Mac. Millan Co., New York.

## Paper VII Advanced Plant Pathology-I

### Principles

1. History of Plant Pathology.
2. The nature, origin & evolution of parasitism.,
3. Interaction of pathogen, soil, other soil micro organisms & the host. Biotrophic parasites in culture—role of plant tissue culture in studies on host-parasite relationships.
4. Phenomenon of plant infection :  
(a) penetration (b) Infection (c) post-infection developments (d) Factors affecting infection (e) defence mechanisms.
5. Host pathogen interaction:—The response of the host, pathogenicity and virulence, host specific toxins in relation to pathogenesis in and disease resistance. Nucleic acids in host parasitic interactions Phytoalexins.
6. Inoculum potential.
7. Epiphytotics and disease forecasting.
8. Plant Disease Control :—  
(a) Physical control (d) Chemical Control  
(c) Plant quarantines (d) Plant disease resistance, & Breeding of resistant varieties.

### Methods :

1. Techniques of isolation, purification, culture and inoculation of pathogens. Technique of tissue culture and its applications in plant pathology. Raising virus free plants in culture.

2. Histopathology, calibration of microscopes and measurements. Use of Electron microscope in histopathological investigations.
3. Writing for publication :
  - (a) Literature collection
  - (b) Notes on experiments
  - (c) Photographs & illustrations (camera lucida drawings)
  - (d) Writing & galley-proofing of manuscripts.
4. Testing of efficacy of fungicides.

#### **Fungal Diseases :**

1. Symptomatology and disease identification.
2. Some important diseases of cereals : Smuts, rusts, leaf blights, spots, mildews, Karnal bunt and Flag smut of wheat; Covered smut and stripe disease of barley; Brown spot and blast of paddy; Brown spot, downy mildews and Drechslera (Helminthosporium) blights of maize; Ergot and smut of bajra; leafspots and smuts of Jowar; Green ear disease of bajra.
3. Other diseases : Red rot and smut of Sugar cane; Fusarium wilt of cotton, flax and pigeon pea; flax rust; Ascochyta blight of gram; early blight of tomato and potato; late blight of potato; Tikka disease of ground-nut and downy and powdery mildews of grapes.

#### **Paper VIII Advanced Plant Pathology II.**

##### **Bacteriology :**

1. Classification and nomenclature of bacterial plant pathogens.
2. Symptomatology.
3. Methods of identification of bacterial pathogens;
  - (i) Morphology (ii) Physiology (iii) Serology (iv) pathogenicity.
4. Physiological and cytological aspects of bacterial infection process and disease development.
5. Mechanism of action of Bacterial pathogens.

##### **Bacterial Diseases :**

1. Brown rot, ring rot of potato
2. Fire blight of Stone fruits.
3. Tundu disease of wheat.
4. Stalk rot of maize.
5. Bacterial blight of rice.
6. Soft rot of vegetables.

7. Red stripe of sugarcane.
8. Crown gall diseases
9. Angular leaf spot of cotton
10. Citrus canker.

#### Virology :

1. Classification, morphology, Physiology, and nature of viruses.
2. Symptomatology.
3. Isolation, purification and culturing of viruses.
4. Viral infection, nutrition, synthesis, and mutation.
5. Transmission of viral diseases.
6. Mycoplasma.
7. Acquired immunity, interference and synergism.

#### Viral diseases :

Potato virus X and Y, Potato Yellow dwarf; Tomato mosaic and Tomato ring mosaic, Tobacco necrosis; Cucumber mosaic, Bunchy top of banana, Bhindi yellow mosaic.

Mycoplasmas : Spike disease of Sandal, Sesame phyllody.

#### Nematology :

1. Classification and identification plant pathogenic nematodes.
2. Morphology and anatomy of nematodes.
4. Methods used in nematology.

#### Nematode disease :

Ear cockle of wheat; root Knot of vegetables. Molya disease of wheat.

#### Non-parasitic diseases :

Diseases due to deficiency of N , Zinc, Boron, and oxygen.; Ozone; PAN (Peroxyacyl nitrate),  $\text{SO}_2$ , Sulphur, and Hydrogen fluoride.

#### Cecidology :

Classification and anatomy of galls. Some insect induced plant galls of Rajasthan (Pongamia leafgall, Cordia leafgall, zilyphus stem gall, Prosopis stem gall). Mechanism and physiology of insect galls.

#### Books for study :

1. Anderson, H.W. Diseases of fruit crops. Mc-Graw Hill Book Co., Inc. New York.
2. Bawden, F.C. Plant viruses and virus disease. Waltham, Mass, U.S.A.

3. Breed, R.S.G.D. Murray, A.P. Hitchens. *Bergey's Manual of Determinative Bacteriology*. The Williams and Wilkins Company, Baltimore.
4. Butler, E.J. & S.G. Jones, *Plant Pathology*—Macmillan Co., London.
7. Chester, C.S. *Nature and prevention of plant diseases*, Vols. 1 & 2. Mc-Graw Hill Book Co., New York.
8. Chester, C.S. *The Cereal Rusts*, *Chronica Botanica*, Waltham, Mass, U.S.A.
9. Chuup, Co., and A.F. Sharf : *Vegetable diseases and their control*. The Ronald Press Co., New York.
10. Dixon, J.C. *Disease of Field Crops*. Mc-Graw Hill Book Co., Inc., New York.
11. Dawson, W.J. *Plant diseases due to bacteria*, Cambridge University Press.
12. Gaumann E. *Principles of plant infection*, Crosby Lockwood and Sons, London.
13. Gram, E. Anne Weber, *Plant diseases*, Universal Text-Books Ltd., London.
14. Horsfall, J.G. and A.E. Dimond. *Plant Pathology*, Vols. 1,2, and 3, Academic Press, New York, London.
15. Holton, C.S. et. al. *Plant Pathology Problems and Progress 1908-59*. The University Wisconsin Press.
16. Mani, M.S.. *Ecology of plant galls*. Dr. W. Junk. Publishers. The Hague, Netherland.
17. Mc. Cubbin, W.A., *The plant quarantine problem*. Enjar Munksgard, Copenhagen.
18. Ramakrishna, T.S. *Diseases of millets*. I.C.A.R., New Delhi.
19. Sasser, J.N. and W.R. Jenkins, *Nematology, Fundamentals and Recent advances*. The University of North Carolina Press, Chapel Hill, New York.
20. Stackman, C.E. and J.G. Harrar, *Principles of Plant Pathology*, The Ronald Press Co., New York.
21. Staff C, *Bacterial plant pathogenes*. Oxford University Press.
22. Vender Plant, J.E. *Plant diseases : Epidemics and Control*. Acadmic Press, New York and London.
23. Walker, J.C. *Pathology*, Mc-Graw Hill Book Company, Inc., New York.
24. Walker, J.C. *Diseases of vegetable crops*. Mc-Graw Hill Book Co., Inc., New York.
25. Wallace, H.R. *The Biology of Plant Parasitic Nematodes*, Edward Arnold Ltd., London.

## Paper VII. Seed Technology.

(Seed Testing, Seed Production & Storage, and Seed Certification.)

## 1. History of seed testing and its importance to agriculture.

Aims of seed testing, I.S.T.A. rules—prescriptions and recommendations, Sampling, Purity analysis, Germination tests, Rapid tests of viability, Seedling evaluation and various methods of seed separation and cleaning.

2. Gross architecture of seed, seed structure of angiosperms, Characters useful in seed identification, Classification of seeds of angiosperms, identification and structure of seeds of important crop plants and their weeds (with special reference to Rajasthan).

3. Principles of seed production, seed production in self and cross-pollinated crop plants; hybrid seed production.

Physiology and biochemistry of seed germination; Seed and seedling vigour.

## 4. Seed dormancy and longevity.

Seed storage methods, principles for safe seed storage, effects of storage : deterioration of seeds in storage by micro-organisms, insects and rodents, control of seed deterioration.

5. Seed certification standards and quarantine regulations, International Seed Testing Association—its rules, amendments, and certificates, other seed certificates; Indian Seeds Act, and National and Regional Seed Corporation of India their organisation, aims and functions.

Practical work will be based on the theory syllabus.

## Paper VIII. Seed Pathology

1. Introduction and importance of seed pathology in modern agriculture: History of seed pathology.

Seed borne inoculum—kinds and various methods of testing.

2. Avenues of seed infection, environment influencing seed infection, infected/contaminated parts of seed, morphology and anatomy of seeds in relation to invasion and location of inoculum of the pathogen in seed.

3. Seed borne diseases of some important crops with particular reference to the State of Rajasthan and India. (Typical case of infection by fungi bacteria, viruses and nematodes; Seed storage fungi and the mode of seed deterioration caused by them.

4. Transmission of disease : types, mode of establishment of infection, factors affecting disease establishment, and course of disease from seed to plant.

Inoculum density and assessment of seed borne inoculum in relation to plant infection, epiphytotics due to seed borne inoculum, disease forecast based on infected seed samples; Tolerance limits of seed borne pathogens.

5. Control of seed borne diseases, principles of control, seed treatments—physical and chemical, mechanism of action of seed treatment, major seed treatments for important seed-borne pathogens with particular reference to crops grown in Rajasthan.

National and international co-operation in seed pathology.

Practical work will be based on the theory syllabus.

#### Paper VII—Environmental Biology :

*Ecosystem* :—Concept, structure and function, flow of energy, cycling of materials, organic production in different types of ecosystems, processes and magnitudes of Production. Evolution of ecosystems.

*Environment* : Holistic environment, factors and their interaction with plants, animals and man. Forests, grassland, freshwater and marine ecosystems. Natural and man made eco-systems.

Impact of man on environment and ecosystems. Natural resources. Pollution and Conservation : Forests, Agriculture, grazing lands, soil, water, energy, air, soil and water pollution. Urban and rural ecosystems. Systems analysis and its application. Role of international organizations (IUCN, UNEP, UNESCO) :

#### *Books for study :*

1. Ashby, M. Introduction to Plant Ecology, Mac-Millan.
2. Billings, W.D. : Plant and Environment.
3. Black, C.A. : Soil Water Plant Relationship.
4. Boughey A.S. : Ecology of Population. Mac-Millan & Co. New York.
5. Clement, F.E. : Dynamics of Vegetation.—H.W. Wilson & Co., New York.)
6. Clause, Stages in the Evolution of Plant species Ithaca New York.
7. Conard, H.L. Plant Ecology. Iowa State Press, Iowa.
8. Daubenmire, R.F. : Plants Environment (Autecology) Wiley Eastern (P) Ltd., New Delhi.

9. Daubenmire, R.F. : Plant Communities. Wiley Eastern. Private Ltd., New Delhi.
10. Dice, L.R. Natural Communities. Michigan University Press.
11. Fuller, C.D. & Conard, H.S. : Plant Sociology. McGraw Hill.
12. Gates, D.M. : Energy Exchange in the Biosphere, Harper & Row, New York.
13. Good, R. : Geography of Flowering Plants. Longmans. London.
14. Klages, K. H.W. : Ecological Crop Geography, Mac Millan & Co., New York.
15. Kramer, P.J. : Plant & Soil water relationship, Mc-Graw Hill.
16. Knight : Basic Concepts in Ecology.
17. Misra, R. : Ecology Work Book. Oxford and I.B.H. New Delhi.
18. Muzik, T.J. : Weed Biology and Control, Mc Graw Hill.
19. Odum, E.P. : Ecology, Holt, Rinehart & Wilson, New York.
20. Odum, E.P. : Fundamentals of Ecology, Saunders, Philadelphia.
21. Oestings, H.J. Study of Plant Communities, Freeman, San-fransisco.
22. Pandey, S.C., Puri, G.S. and Singh, J.S. : Research Methods in Plant Ecology, Asia Pub. House, Bombay.
23. Prodan, M. : Forest Biometrics, Pergamon Press, London
24. Puri, G.S. : Forest Ecology, Oxford Book and Stationery Co., New Delhi.
25. Tansley, A.G. : Practical Plant Ecology. Allen & Unwin London.
26. Woodbury, A.M. : Principles of General Ecology, New-York.
27. Teuscher, H. and Adler, R. : The Soil and its Fertility, Reinhold Pub. Corp, New York.
28. Weaver and Clements : Plant Ecology, Mc-Graw Hill Book Co., New York.
29. Whitaker, K.H. Plants and Ecosystem.
30. Wilse, Carol, G.P. : Corp, Adaptation, Freeman, San-fransisco.



## Paper VIII—Arid Zone Ecology

1. *Deserts, their formation, topography and distribution*, Characteristics of deserts with special reference to water economy.

The hot and cold desert and other similar habitats, vegetation. Arid regions of India with particular reference to Rajasthan.

2. The saline tracts and their vegetation (halophytes). Climatic conditions in the desert and their effect on the vegetation types and distribution.

3. Rajasthan—geology, physiography, climate, vegetation and soils.

Plant communities in the desert of Rajasthan. Soil erosion and reclamation.

4. Stabilization of the desert.

Adaptations of plants and animals to arid condition. The biotic factor including the role of man on the vegetation in arid zones.

5. Habit studies and phenology of the desert plants through the various seasons. Root investigations.

Reproductive capacity, seed output, germination, dormancy and viability : perennation.

Desert as an ecosystem—biological productivity, Cycles and balances in the desert ecosystem.

*Books for study :*

1. A.A.A.S. (U.S.A.) : The future of Arid Lands, Washington D.C.
2. Jaeger, E.C. : The North American Desert, Palo-Alto Calif. Stanford University Press.
3. Leopold. A Starker : The desert—New York.
4. Ley, Wiley. The Poles—New York.
5. Mayer A.M. and A Poljakoff-Mayber The germination of Seeds, Pergamon Press, Oxford.
6. The Rajputana Desert—Bulletin. National Institute of Science, No. 1—New Delhi.
7. Sears, P.B. : Desert on the march. University of Oklahoma Press, Norman, Okla.
8. Thomas, W.L. : Man's role in changing the face of the earth. Chicago University Press.

## Paper VII—Advanced Morphology of Angiosperms:

1. Floral anatomy and its role in explaining the morphology of the Stamen and Carpel. Placentation : Inferior ovary. Taxonomic significance of floral anatomy. Anatomy of the seed and pericarp and their taxonomic significance.
2. Anther—organizational relationship of anthers tissues; ultrastructure aspects of microsporogenesis Pollen--sporoderm pattern, pollen analysis, pollen fertility and sterility, allergy due to pollen, *Viability, storage and germination of pollen.*
3. Embryosac—basic types and their interrelationships. ultrastructural aspects of embryosac development. Pollen--pistil interaction, cytomorphology of style and stigma, role of pollen wall proteins and Stigma surface proteins. physiological and ultrastructural studies on pollen tube growth in the pistil, chemotropism, fertilization.
4. Endosperm--Interrelationships of the major types of endosperms, cytology and role in embryos development.

Embryo--Major types, embryogenic laws, comparison of Soueges and Johansen's systems, physiological factors controlling growth and differentiation of embryo-Apomixis—gynogenesis and androgenesis, somatic embryogenesis, agri-horticultural importance, Polyembryony--natural and induced, methods of induction, agri-horticultural importance.

5. Embryological features of the following families : Santalaceae, Loranthaceae, Podostemaceae, Curcubitaceae, Scrophulariaceae, Acanthaceae, Orobanchaceae, Lentibulariaceae.

*Books for study :*

1. Bhojwani S.S., Bhatnagar S.P., The embryology of Angiosperms Vikas, New Delhi.
2. Eames, A.J. Morphology of Angiosperms Mc-Graw Hill.
3. Esau, K. Anatomy of Seed Plants John Wiley.
4. Esau, K. Plant Anatomy, John Wiley.
5. Fahn, A. Plant Anatomy, Pergamon Press, Oxford.
6. Joster, A.S. Practical Plant Anatomy, D. Von Nostrand Co.
7. Johri, B.M. (ed.) N.I.Sc(, Symposium--Embryology of the Angiosperms, Delhi.

8. Maheshwari, P. Embryology of Angiosperms, Mc-Graw Hill.
9. Maheshwari, P. (ed.) Recent Advances in the Embryology of Angiosperms, Delhi.
10. Maheshwari, P. (ed.) Plant Embryology—a symposium, C.S.I.R., New Delhi.
11. Puri V. Role of floral anatomy in the solution of morphological problems, Bot., Rev, 17(7) 1951.  
Puri, V. Placentation in Angiosperms, Bot., Rev, 18(9) : 1952
13. Wardlaw, C.W. Embryogenesis in Plants, Methuen, London.

#### Paper VIII—Plant Morphogenesis :

1. Development and morphogenesis - meristems, growth and formation of organs; experimental work on apical meristems.
2. The phenomenon of morphogenesis - correlation; polarity; symmetry; differentiation; regeneration; tissue, mixture; abnormal development.
3. Morphogenetic factors—physical; mechanical; chemical; genetic.
4. Cell, tissue and organ culture—important media; embryogenesis and organogenesis in cultured cells and tissues, regeneration of plants and clonal multiplication; cell plating technique and isolation of mutant cell lines; protoplast isolation and fusion (somatic hybridization); culture of anther and microspores—haploid formation; culture of ovule, endosperm and ovary; control of fertilization; embryo culture—nutritional requirements and the applications; experimental work on embryology of, parasitic plants; the advantages and potential of tissue culture techniques.

#### *Books for study :*

1. Sinnott. E.W. Plant Morphogenesis. Mc-Graw Hill.
2. Steward, Growth and Organization in Plants.
3. Sussman, M. Growth & development, Prentic Hall.
4. Torrey, Developmet in Flowering Plants.
5. Wardlaw, C.W. Phylogeny and Morphogenesis, Macmillan.
6. Wardlaw, C.W., Trends in Plant Morphogenesis.
7. Wardlaw, C.W., Embryogenesis in Plants, Methuen & Co. London.
8. Wardlaw, C. W., Morphogenesis in Plants. Methuen & Co., London.

9. Wardlaw, C.W., Organization and evolution in Plants.
10. Street, H.E. (ed.) Plant tissue and cell culture Botanical monographs Vol. 11 University of California Press, Berkeley.
11. Raghavan, V. Experimental Embryogenesis in vascular plants. Academic Press, London.
12. Reinert, J & Bajaj, Y.P.S. (ed.) Plant cell, tissue and organ culture. Springer-verlag, Berlin, Heidelberg, New York.

#### Paper VII—Herbarium Botany :

#### HERBARIUM BOTANY

1. Exploration for data : Field study, collection, observations :-Phyto-sociological, behavioural & ethnobotanical
2. Classification of collection of plants : Nomenclature—application of rules of—.
3. Preservation : Herbarium, its significance, Museum. Important herbaria of the world, S.E. Asia and India, and their contributions.
4. Description and documentation :—preparation of the artificial keys, use of library.
5. Application of modern tool (s) of taxonomy.

#### Practical

A treatise on the flora of a geographical unit or a revision of a taxon leading to a monographic study.

#### BOOKS FOR STUDY

1. Davis P.P. & V.H. Heywood *Principles of Angiosperm Taxonomy* Oliver & Boyd.
2. Heywood, V.H. *Modern Methods in Plant Taxonomy* Acad. Press.
3. *International Code of Botanical Nomenclature* I.A.P.T.
4. Jain, S.K. & R.R. Rao *A Hand-book of Field & Herbarium Methods* Today & Tomorrows, New Delhi.
5. Lawrence, G.H.M. *Taxonomy of vascular Plants*. Mcmillan, New York.
6. Lyman Benson *Plant Taxonomy : Methods & Principles* Chronica Botanica

7. Santapan, H.S.J. *Botanical Collector Manual*  
Govt. of India Publi.
8. Solbrig, O.T. *Principles & Methods of Plant*  
*Biosystematics*, Macmillan.
9. Swain, T. *Chemical Plant Taxonomy* Acad.  
Press.
10. Willis, J.C. *A Dictionary of Flowering*  
*Plants & Ferns*, C.U.P. ed. H.K.  
Airy Shaw.

**Paper VIII—Advances in Taxonomy :**

1. (a) 'Alpha' & 'Omega' taxonomy--a brief history of the  
development of the latter.  
(b) Need and analysis of data from other branches of  
biology.
  2. Characters used for classification: types of characters,  
"good" & bad characters.
  3. Character co-relation & discrimination-Numerical Ta-  
xonomy.
  4. **Morphological Characters :**  
(a) Anatomy-(Floral & vegetative) & Taxonomy.  
(b) Embryology & Taxonomy.  
(c) Palynology-Palynotaxonomy.
  5. **Biosystematics :**  
(a) Cytological & genetic characters-cytotaxonomy.  
(b) Populations-environment & Taxonomy, speciation-  
hybridization, polyploidy, isolating mechanisms.  
(c) Modern concept of species & other taxa.
  6. Chemistry of Plant constituents & Taxonomy-Chae-  
motaxonomy.
-

MINUTES OF THE SPECIAL MEETING OF THE BOARD  
OF STUDIES IN BUSINESS ADMINISTRATION  
HELD ON THE 9TH AND 10TH JULY, 1979 AT  
11.00 A.M. IN THE VICE-CHANCELLOR'S  
SECRETARIAT, NEW BUILDING  
JAIPUR.

Present :

1. Shri G.N. Sharma ( Convener )
2. Shri M.B.L. Mathur
3. Shri G. Upadhyaya
4. Shri R.N. Thakur
5. Shri Naurang Lal
6. Dr. N. K. Kulshrestha
7. Dr. R.N. Singh
8. Shri M.M. Gupta ; (Dean).

N.B. (i) Shri N.K. Kulshrestha attended the meeting on the 10th July, 1979 only.

Before taking up regular agenda of the Board the Convener accorded a cordial welcome to the new members of the Board.

1. With reference to Academic Council Res. No. 16, dated 15.5.1979 & the Syndicate Res. No. 2 (II), dated 26/27 May, 1979, the Board *recommended* the courses of study for the M.B.A. Examination (*annual scheme*), 1980 only (Appendix-I).

However the Board was of unanimous opinion that Semester scheme of Examination for the M.B.A. Degree be restored from the examination of 1981.

The Board in this regard put an explanatory note (*Vide Appendix-II*) and *strongly recommended* that the matter relating to restoration of the Semester Scheme of Examination be referred back to the Academic Council for reconsideration at its next meeting.

2. With reference to the Academic Council Res. No. 10, dated the 1st June, 1979 and the Syndicate Res. No. 3 dated the 16th June, 1979 *the Board recommended* necessary changes in the courses in the M.S.S. of the Syllabuses for the under-graduate and degree examination of 1981 placed before the Board by the University Office consequent upon the abolition of the unit system (Appendix-III).

3. With reference to the Faculty of Commerce Res. No. 12 dated the 17/18 March, 1979 *the Board considered* the suggestion (given in Appendix IV) of the work shop on management education in the 20th century India'.

*Resolved that the suggestion of substituting "Export Marketing" paper for "Foreign Trade Management" at the P.G level be not accepted, and status-quo be maintained.*

4. *The Board considered* the following proposals made by :

(i) Dr H.C. Rara, Lecturer in Accountancy, University Deptt., of Accountancy, Jaipur regarding changes in the courses of Study and scheme of Examination of Steno-typing in Hindi/English as contained in his letter dated 4 March, 1979 which was referred to the Board by the Faculty of Commerce, vide Res. No. 13 dated 17/18 March, 1979 (Appendix-V).

(ii) Shri P. P. Bhargava, Lecturer, University Deptt. of Business Administration Jaipur, regarding changes in the Scheme of Examination of steno-typing as contained in his letter dated 28.11.1978 (Appendix-VI).

*Resolved that the Scheme of Second Year Commerce Examination in Stenotyping be considered at the annual meeting of the Board at the time of consideration of Syllabus for the examination of 1982 so as to provide short-hand as well as type-writing subjects in Ilyear T.D.C. also.*

5. With reference to the Faculty of Commerce Res. No. 18 dated 17/18 March, 1979 *the Board considered the proposal jointly made by Shri A.B.L. Mathur and P.K. Srivastava, University Lecturers (vide appendix—VII) and also heard them in person.*

*Resolved that the proposals be* looked into by the Board at its next meeting when the courses of study for the examinations of 1982 are considered.

6. With reference the Faculty of Commesce Res. No. 14 dated 17/18 March, 1979 the Board *considered* proposal made by Shri J P. Srivastava, Incharge (M.Com.) Institute of Correspondence Studies and Continuing Education, University of Rajasthan, Jaipur as contained in his letter No. M.C.A./45959-60 dated the 3rd March, 1979 (Vide Appendix-VIII) duly forwarded by the Director of Institute.

*Board Resolved* that the proposal be not accepted.

The meeting ended with a vote of thanks to the Chair.

*Convener*



## APPENDIX—I

## Master of Business Administration (M.B.A.)

## O.250—A.

The examination for the degree of Master of Business Administration shall consist of Two parts :—

- (1) The First Year Examination and
- (2) The Second Year Examination.

The examination shall consist of (a) theory papers, (b) a Project report and (c) a Viva-Voce test. Candidates will be required to pursue a regular courses of study in the University/affiliated college for the examination and they will also be required to undertake an Industrial and Business Tour lasting for about 10 to 15 days.

## O.250—B.

- (i) A candidate who after passing the Bachelor of Commerce Examination of the University or of any other University recognised for the purpose by the Syndicate or Bachelor's degree examination of the University or of any other University recognised for the purpose by the Syndicate in any other discipline, will be eligible for admission to the First Year course for the degree of Master of Business Administration.
- (ii) Each examination shall be regarded as a unit for working out the result of the candidates. The result of each examination shall be worked out separately (even if he has appeared at the paper(s) of the First year examination alongwith the paper(s) of Second year Examination) in accordance with the following conditions :—
  - (1) He must have secured at least 36% marks in each individual paper/dissertation/viva-voce prescribed for the examinations.
  - (2) He must have secured at least 48% marks in the aggregate of all the papers/dissertation/viva-voce prescribed for the examinations.

A candidate who does not fulfil the above conditions shall be declared failed.

- (iii) The division of the successful candidates shall be worked out at the end of the Second year Examination on the basis of the aggregate marks obtained by them at all the examinations taken together, as noted below :

First Division	60%	} of the aggregate marks of First year and Second year examinations taken together.
Second Division	48%	

If a candidate clears any Paper(s)/Dissertation/viva-voce prescribed for any of the examination after a continuous period of three years since he was admitted to the first year course, then for the purpose of working out his division, only the minimum pass marks viz 36% shall be taken into account in the case of such paper(s)/dissertation/viva-voce as are cleared after the aforesaid period :

Provided that in case where a candidate requires more than 36% marks in order to reach the requisite minimum aggregate, as many marks out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.

- (iv) A candidate failing or absenting in one or more paper(s) dissertation/viva-voce at an examination shall be permitted to join the courses of study for the next higher examination provided for promotion to the courses of study for the second year a candidate must have cleared at least 50% of the papers prescribed for the First year Examination, Where the number of papers prescribed for the First year examination is an odd number, it shall be increased by one for the purpose of reckoning 50% of the papers.

A candidate who fails at a semester examination for want of securing the requisite minimum percentage in the aggregate marks, he shall be exempted from re-appearing in such paper(s)/dissertation/viva-voce in which he has secured at least 48% marks.

A candidate who fails at an examination for want of requisite minimum percentage of marks prescribed for each individual paper but has secured the requisite minimum percentage of marks in the aggregate of all the papers (including dissertation/viva voce), shall be exempted from reappearing in such paper(s) dissertation/viva-voce in which he has secured atleast 36% marks.

- (v) A candidate for an examination shall offer all the papers prescribed for that examination and besides, he may also offer paper(s) not cleared by him in any of the lower examination subject to the limitation that the number of uncleared papers of the lower examination shall not exceed the number of papers prescribed

for any of the examinations (If, however, a candidate has to clear more papers of the lower examination than the above limitation, then the remaining papers may be offered by him at a subsequent examination, subject to fulfilment of other conditions.

- Notes* —1. Candidate reappearing at an examination in a subsequent year shall be examined in accordance with the scheme and syllabus in force.
2. Candidate shall be entitled to the award of the degree of the year in which the last failing paper/papers are cleared by him.

R. 20—A.

## MASTER OF BUSINESS ADMINISTRATION (M.B.A.) SCHEME OF ANNUAL EXAMINATION

Each theory Paper	3 hrs.	100 marks
Project Report and Practical training	40 marks	} 100 marks
Tour Report	10 marks	
Viva-Voce	50 marks	

There will be Eleven theory papers and a written analysis of cases/Viva Voce test. Of these papers, Nine papers will be the compulsory and two papers from one Elective group.

### First Year M.B.A. Examination

Paper 1. Industrial Psychology, Human Behaviour and Organisation Theory.

Paper 2. Marketing Management.

Paper 3. Financial Accounting, Control and Management.

Paper 4. Managerial Economics.

Paper 5. Quantitative Techniques and Production Management.

Paper 6. Written Analysis of cases (W.A.C.)

The evaluation in the course of WAC will be made on the basis of home assignments and class work during the first year. The marks obtained by the candidates will be added at the end of the First year. There will be no written examination in this course.

### Second Year M.B.A. Examination

Paper 1. Business Policy.

Paper 2. Business, Society, Government and Executive Development.

Paper 3 and 4 to be opted from one of the following Elective Groups :

*Group A : Human Area :*

Paper 3. Personnel Management.

Paper 4. Industrial Relations.

*Group B : Finance Area :*

Paper 3. Business Finance.

Paper 4. Management of Financial Institutions.

*Group C : Marketing Area :*

Paper 3. Advertising Management and Marketing Research.

Paper 4. Sales Management and International Marketing.

Paper 5. Project Report and Practical Training during the summer vacation of Eight Weeks' duration and Tour Report and Viva Voce.

The marks of the Project Reports etc. will be divided as follows :

- (i) Project Report : 40 marks out of which 10 marks would be assigned to the confidential report given by the Officer incharge of the organisation where the candidate will undergo training.
- (ii) Tour Report : 10 marks (each candidate will be required to Submit a report on his tour.)
- (iii) Viva-Voce : 50 marks.

The Project work shall be type written in English and shall be submitted in triplicate so as to reach the Director of the Institute of Management ordinarily by the 15th of October following the First Year Examination. The Project Report shall be examined after the Second Year Examination by two examiners—one Internal (Director of the Institute) and one External (External to the University). The Director of the Institute shall soon thereafter forward the award list to the Registrar.

The Viva-Voce test at the end of the Second year examination will be held by a Board of two examiners—one internal (Director of the Institute) and one external (external to the University).

## MASTER OF BUSINESS ADMINISTRATION (M.B.A.)

### SYLLABUS

First Year Examination 1980.

#### Paper—1. Industrial Psychology, Human Behaviour and Organisation Theory

3 hrs. duration, Max. marks. 100

##### PART A (Industrial Psychology)

##### Introduction :—

The Scope of Industrial Psychology. Functions and Activities of Industrial Psychology. Limitation of Industrial Psychology.

Individual differences in Behaviour. Job analysis and Job requirements.

Personnel selection and appraisal. Training.

The measurement of attitude and morale. Motivation and Job satisfaction. Human Behaviour in Organisation.

Working conditions. Psychological aspects of consumer behaviour.

##### PART B

#### Human Behaviour and Organisation Theory

##### Evolution of Organisation Theory :

Organisational Environment : Organisation and its relationship with society, Key variables in organisational planning. Formal and Informal organisations, determinants of inter-personal and inter-group relationship in organisations.

##### Organisational Structures :

Organisation chart and its uses, Bureaucratic and democratic organisation; Authority and Power Structures. Delegation of authority and responsibility. Developing decentralised structures.

##### Leadership and Development :

Leadership defined, Trait versus Situation Approach to the study of Leadership. Process-leadership styles and behaviour, Development of participation.

##### Motivation and Personality Development :

Understanding human nature and needs, Hierarchy of needs Motivational factors, Motivation, process understanding, employee expectations from their jobs.

**Management Process :**

The role of Manager, Managerial functions, Developing Managerial Skills, Personality Traits, Functional areas of Management.

**Decision Making :**

The process of decision making—Use of Committees; Developing decision making skills.

**Management of change :**

Understanding the dimensions of change—change process; Meeting resistance to change—Developing organisational health.

**Communicating in organisations :**

Creating Communication channels, Barriers to Communication, Use of media of communication, Development effective communication

**References :**

1. Paul Hersey and Kenneth H. Blanchard.  
Management of Organisational Behaviour.
2. Keith Davis—Human Relations at work.
3. Warrn G. Bennis—Changing organisations.
4. Edger. H. Schien—Organisational Psychology.
5. Newman and Summer—Process of Management.
6. Fred Luthans—Organisational Behaviour.

*N.B.* : Students are required to attempt two questions from each sections.

**Paper—2. Marketing Management**

3 hrs. duration, Max. marks 100

**PART A**

Nature and Scope of Marketing Management, Marketing Concept : Market Planning : Role and Scope of Marketing Management in India.

Markets and Marketing Environment : Social, Legal and Ethical issues in marketing.

Marketing Research : Importance and use in Management; Types of market research, marketing research procedure. marketing research in India.

Product planning : Product Policy decision—design; colour; new uses; brands and trade marks; packaging; expanding/simplifying the Line : Product planning in India.

Channels of distribution; Changes in distribution methods; types of channels; objectives and constraints; evaluating the major channel alternative; changing channels of distribution in India.

## PART B

Price and the Market, Pricing process, discount policy, price and break-even analysis.

Planning and administering the market programme; Determination of the marketing expense budget; manufacturer-distributor relationships.

Advertising and Sales Promotion : Advertising Programmes: management's problem and responsibility.

Objective and problems of Control; Means of control; Facts needed for control system.

Paper—3. Financial Accounting, Control and Management.

3 hrs. duration Max. Marks 100

## PART A

Nature and Significance of Accounting :

Objectives and functions; the accounting concepts.

Financial Statements :

Analysis and Interpretation. Nature of financial statements. The Balance Sheet and the Profit and Loss account; inter-relationship and advantages in modern business; methods and devices used in analysing financial statements. Ratio analysis.

Marginal Costing and Break Even Analysis Concept :

Basic characteristics and working of marginal costing : marginal costing and pricing : cost volume profit relation-ship; Break even analysis.

Standard Costing :

Standard cost and other cost systems, essentials for an effective system of standard costing; determination of standards; variance analysis.

Control :

Genesis, nature and importance of control; Basic mechanism of control; Salient management control; Concept Aids to control; Responsibility accounting.



**Budgets and Budgetary Control :**

Nature and objectives; advantages and limitations of budgets and budgetary control; organisation of budgetary control; classification of budgets and preparation of budgets.

**PART B**

The goals and functions of finance; The evolution of finance; objectives of the firm: Functions of finance.

The Financial Plan, need for various categories of funds, Cost and importance of liquidity; Fund flow analysis, Financial forecasting. Analysis of operating and financial leverage.

Capital Budgeting : Rationale of capital budgeting; methods of ranking investment proposals and capital priorities, Capital expenditure control.

Cost of Capital for specific sources of financing, Weighted average, cost of capital and other techniques.

Reporting to Management. General principles of reporting; types and modes of reporting, preparation and use of reports.

**Books for reference :**

1. Financial Management and Policy by James C. Van Horne.
2. Basic Business Finance by Hunt, Williams and Donaldson.
3. Management Accounting by Robert Anthony.
4. Financial Management and Policy by Van Horne.
5. Management Accounting by Robert Anthony.

**Paper—4. Managerial Economics.**

3 hrs. duration, Max. marks—100

**PART A****The nature and scope of Managerial Economics :**

Economics and Management, Micro-economics and macro-economics; Normative and Descriptive economics, relationship with other branches of learning relevant to decision making.

**Fundamental Concepts and their application :**

Incremental Concept, The Concept of time perspective, The Opportunity Cost Concept. The Marginal and equimarginal concept. The Discounting principle Some important applications. Make or Buy and Product line decisions.

**Demand Analysis and Forecasting :**

Some basic concepts; Determinants of demand; Elasticity of Demand, Demand Forecasting : scope and methods.

**Production and Cost Analysis :**

Production function; Cost concepts and classifications; cost-output relationship.

**Pricing Decisions, Policies and Practices :**

Pricing and output decisions under perfect competition and imperfect competition, pricing policies; pricing methods; specific pricing problems, price discrimination, product line pricing.

**PART 'B'**

**Profit Management :**

Nature of profit; profit measurement and policy: profit maximisation.

Profit planning and control.

**Capital Management :**

Capital Budgeting; Cost of capital; appraising project profitability, risk, probability and investment decisions.

**Decision Tools and Techniques :**

Linear Programming, Input-output analysis and Break-even chart.

Game Theory, Queuing Theory.

**Reference :**

1. Haynes, Mote and Paul—Managerial Economics.
2. Joel Dean—Managerial Economics.
3. D. C. Hague—Managerial Economics.

**Paper—5. Quantitative Techniques and Production Management**

3 hrs. duration Max. marks 100

**PART A—Quantitative Techniques**

Quantitative Analysis, Nature and scope. Elementary Maths. and Statistics. Set theory and matrix algebra.

Survey of probability concept, probability distributions Normal, Poisson, Binomial, Exponential distributions.

Correlation and regression.

Decision making under certainty, uncertainty and under risk.

Linear Programming : Simplex method.

Transportation problem, Dual problem, Inventory Control.

*Books recommended :*

1. Essentials of Statistical and Quantitative Techniques;  
L. Venkatachalam.
2. Economic Decision Making by J.L. Riggs.
3. Decision Making Through Operations Research by  
Thriauf.

**PART B—Production Management**

Work Study, including process planning location, lay out of physical facilities, assembly line balancing, work sampling.

Net work techniques, PERT & CPM

Quening problems in production.

The Monte Carlo Simulation, replacement models.

Quality control, Process control.

Product control, control charts, sampling inspection, O.C. curve, Average out going quality limit.

Introduction to Markov process.

Industrial dynamics.

Dynamic programming.

*Books recommended :*

1. The Quantitative Approach  
to Managerial Decisions. : By I.W. Heign
2. Work Study. : I.L.O.
3. PERT & CPM : L.S. Srinath.
4. Industrial Statistics and  
Quality control. : Duncan.
5. Quality Control : Hansen.
6. Modern Production  
Management. : Buffa.

*N.B. :* Students are required to attempt two questions from each sections.

**Paper—6. Written Analysis of Cases (WAC)**

The evaluation in the course of WAC will be made on the basis of home assignments and class work during the First Year. The marks obtained by the candidates will be added at the end of the First year. There will be no written examination in the course.

## MASTER OF BUSINESS ADMINISTRATION (M.B.A.)

### SYLLABUS

Second Year Examination, 1981

Paper—I. Business Policy.

#### PART A

One Paper—3 hrs. duration                      Max. marks 100

Business Policy as a field of study;

The concept of corporate strategy;

Establishing Company Goals Approach to Central Management Problems; Dynamic setting of Business : Appraising the outlook for a company: basic company objectives.

Defining major Policies—(a) Sales policies—Products, Customers Sales Promotion (b) Production and Purchasing Policies; (c) Personnel Policies—Selection and training, compensation and arrangements for work: employee services and Industrial relations: (d) Financial Policies—Uses of capital, sources of capital, Protection of capital and Distribution of earnings.

Organising for Action—Grouping Activities for effective operation; Organisational Relationships; Balancing the organisational structure; Board of Directors and Central Management Organisation.

#### PART—B

Developing Major resources—Executive Personnel : Facilities;

Guiding the execution of Plans—short and long range programming Activating: Controlling operations.

The Company and its social responsibilities; Relating Corporate strategy and Moral values.

Synthesis—Company Wide, integrated approach to Central Management.

Selected Indian cases.

Paper 2.—BUSINESS, SOCIETY. GOVERNMENT AND EXECUTIVE DEVELOPMENT

#### PART—A

One Paper—3 hrs. duration                      Max. marks 100

Business defined, Characteristics of Business: The economic basis of business. Business occupations; Objectives of Business.

Business and Society—Business ethics, responsibilities of business to consumers, employees, shareholders, sister-business concerns, government and public in general.

Forms of State intervention in Business; concept of Welfare State, Industrial Policy. Industrial development and regulation; Industrial Licensing—process and system.

Control over business through corporate law. Control of Capital issues. Control over monopoly and restrictive trade practices. The concept of public enterprise. Commercial policy.

The concept of mixed economy, Taxation policy of Government.

### PART—B

The role of Management.

Need for Management Development.

The nature and Scope of executive development programmes.

Management Development Methods.

In-company programmes for Executive Development.

Executive Development programmes in India.

Evaluation of Management Development programmes.

#### *Books recommended :*

1. Harwood F. Merrill and Elizabeth Marting. Developing Executive Skills
2. A Das Gupta : Business and Management in India.

*N.B. :* Students are required to attempt two questions from each part.

Paper 3 and Paper 4—to be opted from one of the following Elective Groups :

Group A :—Human Area :

Paper 3—PERSONNEL MANAGEMENT :

One Paper—3 hrs. duration

Max. marks 100

### PART—A

Evolution of Personnel Management :

Its concepts, Philosophies and Practices.

Organising Personnel Programme :

Job organisation and informal work groups and their culture authority and influence; grouping activities—decentralisation and delegation; human problems in organisations:

Personnel Policies :

Considerations and objectives, hierarchy in Organisations—Manpower Planning; Factors in creating levels, line-staff conflicts.

## Employment, development and Audit of Personnel—

Recruitment practices and procedure—Assessing training needs and organising training programmes; Executive and operative training programme. Employee appraisal—Trends and perspectives.

## Promotions and transfers :

Formal and informal bases of promotions, dilemmas in promotions.

## Human behaviour and its understanding :

Personnel needs—motivation at work Informal and formal group relations. The supervisor and the group. Supervisory styles and patterns of effective supervision.

## Communication and Leadership :

The problems of discipline.

## PART—B

Wages and salary administration :—The concept of minimum fair and living wages, job evaluation, wage differentials, wage fixation machinery in India, wage boards and their working in India.

Employee services and fringe benefits.

Health and safety services.

Incentive and Bonus, Financial and non-financial incentives, bonus in India, Individual and group incentive plans.

Personnel Management in perspective—Scientific and technical advances vis-a-vis Personnel Management Automation and Rationalisation—Some Policy considerations sharing the gains of productivity.

## Paper 4 : INDUSTRIAL RELATIONS

One Paper—3 hrs. duration

Max. marks 100

## PART—A

Nature of industrial work—Technological development and workers' setting—Industrial worker and his technical and social context. Evolution of Industrial labour in India.

Industrial Relations system—Industrial society and its ideologies; State and industrial relations in India. Union—Management behaviour and its patterns.

Industrial peace and its problems—Causes of industrial discontent; Industrial relations machinery; the concept of joint consultation its pattern in India.

Postulates of Industrial relations policy—The norms of industrial jurisprudence—voluntary codes and their importance.

Industrial Relations in Public undertakings.

Wages—Policy and issues—Wage fixation and protection; Economic security for industrial workers.

## PART—B

Unions and Management—Union objectives and behaviour—motivation to join unions; dealing with unions.

Union security—growth, structure and problems of unions in India—Recognition of unions, outsiders and union administration.

Employer's organisations—Aims objects and social responsibilities.

Collective bargaining—the nature—The legal frame-work and role of collective bargaining, subject matter of collective bargaining, pattern and progress of collective bargaining in India.

Industrial Democracy—The concept, management by participation; joint management councils in India. Growth and development, the problems in effective participation.

Unions-employers and government relations.

## Group B : Finance Area :

Paper 3 : BUSINESS FINANCE

One Paper—3 hrs. duration

Max. marks 100

## PART—A

### Need for Funds :

Working capital and Fixed assets.

Management of working capital and investment in fixed assets.

### Short and Intermediate Term Sources of Funds :

The Bank credit; problems and possibilities; procedural difficulties and legal problems, security vs. growth potential.

Non-banking sources: Commercial paper, negotiable certificates of deposits, factoring.

Effective use of security; in business borrowing :

the role of security; various methods of securing loans and securities offered; relative importance.

Trade Credit.

### **The Long term capital Structure :**

The capital structure; Ordinary and preferred stock under writing; rights issues, debt capacity and leverage.

Bonds and debentures.

Retained earnings and dividend policy.

Depreciation as a source of business finance.

Methods and techniques of financing through depreciation.

## **PART—B**

### **The State Policy :**

Nature and effects of Government regulation of new issues of shares and bonds: control of capital issues in India.

### **Financing the Priority Sectors :**

The problems of small business and small industry, special assistance to small enterprises; the guarantee schemes of the Government, need and importance. Financing of small industry in India.

### **Financing of Foreign Trade :**

The sources of finance; procedures and problems, leakage in foreign exchange, under-invoicing and over-invoicing.

The role of the State in export promotion through finance.

### **The Corporate Financial Structure in India :**

Recent Trends.

### ***Books for Reference :***

( i ) Basic Business Finance : Hunt William & Donaldson.

( ii ) Corporation Finance: S.C. Kuchhal.

### **Paper 4 : MANAGEMENT OF FINANCIAL INSTITUTIONS—I**

One Paper—3 hrs. duration

Max. marks 100

## **PART—A**

### **The Money and Capital markets :**

Nature and functions; importance in a developing economy; need and elements of a developed capital market.

### **Money Market Instruments :**

The bills, government securities; bonds and debentures, negotiables of deposit and commercial paper etc.



**Commercial Banks :**

Sources of funds and credit policies, credit creation mechanism; portfolio management.

Fashioning credit for priority sectors; conditions of credit and cost structure.

**Management of credit policy :**

The central Bank; its role in monetary management, tools of monetary policy, efficiency of various tools in a developing economy with special reference to India. Central Bank-treasury relations.

**PART—'B'****Financial Institutions and State Policy :**

The role of the State in promotion and Management of Financial institution.

Public Sector Banking in India—Recent Trends.

**Development Finance :**

The origin and growth of development banks; characteristics and functions. Special problems and operational features. Development banking in India; An analysis. The unit Trust of India.

**International Finance :**

Financing of International Trade and Industry: The Exim-banks. The World Bank and International Finance Corporation: Their role in financing business and industry in developing economies with special reference to India.

Institutions covering export risks. ECGC of India

**Reference :****Annual Reports :**

Ministry of Finance : Government of India; IDBI : ICICI : IFCI : UTI : IMF: EXIMBANKS OF U.S.A. AND JAPAN and ECGC.

**Group C : Marketing Area****Paper 3 : ADVERTISING MANAGEMENT AND MARKETING RESEARCH :**

One Paper -3 hrs. duration

Max. marks. 100

**PART—'A'**

Consumer Orientation in Advertising;  
Adoption Process of New Products;  
Defining Advertising Objectives;

Creative Evaluation;  
 Quantitative Aspects of Media;  
 Inter-Media Comparisons;  
 Media Resources in India;  
 Determining the Advertising Budget;  
 Developing Media Strategy;  
 Developing Advertising Campaign;  
 Concept of Accountability;  
 Measuring Advertising Effectiveness;  
 Role of Consumer Promotions;  
 Industrial Advertising;  
 Client-Agency Relationship;  
 Problems in Corporate image building.

### PART—'B'

#### Introduction to Marketing Research :

Information Systems and Marketing Research.  
 Marketing Research, Needs and applications.

#### Defining and Planning Research :

Problem Discovery and Formulation of Plans.  
 Research Design.

#### Gathering the Data :

Secondary Data.  
 Primary Data.  
 Sampling in Marketing.  
 Questionnaires.  
 Obtaining information from respondents,

#### Analysis, Interpretation and Utilisation :

Analytical Methods.  
 Processing and Interpreting Data.  
 Reporting and Follow Through.

#### Applications :

Market analysis and Forecasting.  
 New product Research.  
 Advertising Research.

#### Books recommended :

1. Luck Wales and Taylor—Marketing Research.
2. Grispi—Marketing Research.

#### Paper 4 : SALES MANAGEMENT AND INTERNATIONAL MARKETING :

One Paper—3 hrs. duration

Max. marks 100

## PART—'A'

### SALES MANAGEMENT

#### The Setting of Sales Management :

- Introduction to the Field.
- Sales Organisation.
- Salesmanship and Sales Management.
- Sales Department Relations.
- Sales Executive's Role.

#### Sales Force Management :

- Management of Salesman.
- Recruiting and Selecting Salesman.
- Training Salesman.
- Motivating Salesman.
- Compensating Salesman.
- Controlling and Evaluating Salesman's Performance.

#### Information for Sales Management :

- Marketing Intelligence and Sales Management.
- Forecasting Sales
- The Sales Budget and Cost Analysis.
- Sales Territories.
- Quotas.

#### Sales Management and Marketing Decision Making :

- Product Management.
- Promotion and Brand Management.
- Pricing.
- Marketing Channels.

#### Coordinating and Controlling the Marketing Mix :

##### *Books recommended :*

1. Still and Cundiff-Sales Management.
2. Confield—Sales Administration.

## PART B

### INTERNATIONAL MARKETING

Domestic versus International Marketing. An Overall view of World Markets;

Product. Packaging, Pricing Channels of Distribution.

Promotional Strategies in the context of International Marketing Environment;

Researching Planning and Organizing for effective Overseas Marketing.

Development of Marketing strategies in International Marketing.

*Note*:—Name of Books are mentioned in the detailed lecture list, to be had from the department after admission.

Paper—5. Project Report/Practical Training Tour Report/ Viva-voce.

## APPENDIX II

### Explanatory Note

The syllabus of M.B.A. based on Semester system has been revised in order to base the same on the annual system of examination for falling in lieu with other examinations of the University as a result of the policy decision taken by the University for switching over to Annual system of Examination.

Be that as it may, the BOS in Business Adm. resolving to recommend that there should be semester system of examination for M. B. A. students, as is the practice in other Management Institutes and Universities running MBA Courses. In view of the number of Courses prescribed for MBA and the multiplicity of courses it is desirable that semester system should continue in the case of M.B.A. examination. Annual system of examination for M. B. A. is neither desirable nor practicable, Thus this Committee very strongly recommends for the continuation of semester system of examination in the case of M.B.A. Examinations.

## APPENDIX 'III'

### II year T.D.C. Commerce Examination

B.Com. Hons. Part—II Exam. Subsidiary subject Gr. B  
Printed on Page 18 of 1978 Syllabus.

#### Business Administration

Paper I—Business Communication and Salesmanship.

The following note be added under the heading of the  
Paper :

“Candidates shall be required to attempt one question  
from section ‘A’ two from section ‘B’ and two from  
Section ‘C’.

### III year T.D C. Commerce (Pass Course)

#### Business Administration

Paper I—Company Law and Secretarial Practice.

and

B.Com. Hons. Part II—Honours

Subject:—Business Administration

Paper III—Company Law and Secretarial Practice.

The following note be added under the heading of the  
paper :—

“Candidates shall be required to attempt three questions  
from section ‘A’ and two questions from Section ‘B’.

## APPENDIX IV

*Ref. item No. 3 of the agenda*

Proposed Syllabus of M.Com. Business Administration (as approved by the Workshop on 'Management Education in 20th Century India' Organised by the Department of Business Administration, University of Rajasthan, Jaipur, December 1977.

**For Being Adopted by The Faculty of Commerce Meeting on  
March 17, 79**

(Present optional paper in the Marketing Group Foreign Trade Management) to be entitled as

**EXPORT MARKTING***Introduction :—*

1. Meaning and importance of Export Marketing-The ingredients of the Marketing Mix-Customer Orientation-Scope of Export Marketing.

2. **The Export Market :—**Initial selection of market-Building a true picture of the market-Market Research Scope, Desk Research and Field Research-Techniques /Methods of conducting Market Research.

3. **The Export Organisation :—**The integrated export department, Separate Export Department-Export sales Company separately incorporated in the exporting country, Foreign subsidiary sales company incorporated in a foreign country combination Export Association-Combination Export Manager-Personnel problems Modern trends-Factors affecting-the choice of an export organisation.

4. **Product Designing and Pricing :—**Scope of product planning with special reference to quality, brand, trademarks and packaging Product Life Cycle-Pricing : Price Policy, price quotation, price structure-Factors affecting pricing decisions.

5. **The Channels of Distribution :—**The process of distribution analysis-Factors affecting the choice-Types (Variety) of channels under Direct and Indirect Trading-Choosing the Export Agent-The Agency Contract: need, safeguard, contents and clauses, specimen-Modern trends in channel dicisions.

6. **Personal Selling :—**Advantage of personal selling-Personal selling, to visiting buyers-Planning visits abroad-Personal selling skills Management of Export Salesmen-Modern Trends.

7. **Marketing Communications (Other Than Personal Selling) :—**Essentials of Export Advertising : Media, Language, sector, financial implications, impact of message, follow-up Organisation of trade faires and exhibitions : Steps to be taken before, during and after such events including arrangements with the press selecting a marketing communication Agency Advertising Agency, Public Relations Consultancies.
8. **Export Finance :—**Meaning—Growing importance as a marketing tool—Credit : its nature and role in export finance Methods of payment, Cash, Bill of Exchange Letter of Credit arrangements, Open Account, Consignment Account—Techniques of export finance : Importer-financed (Advance payment) self financing, suppliers credit : Direct loans, Discounting of Bills, Factoring, Refinancing Facilities, Credit Risk Insurance Financial and other Gaurantees, Special Policies/Arrangement Buyers Credit (including allowed by foreign country/ international organisations Common export financing problems of developping countries.
9. **Export Procedure and Documentation :—**The broad procedure Main documents in export trade, their contents and specimen Importance of learning documentation—Problems in documentation.
10. **Export Marketing in India :—**Structure of foreign trade organisation in India : Governmental : private Intercountry bilateral and multi-lateral : Government and private—Export Assistance and Incentives—Export Procedure—Examples of India firms (Both public and private) on different facts of export marketing, in practice.

*N.B.* :—For Semester purposes, the above ten units may be divided into two parts : PART I Units 1 to 5 : PART II Units 6-10.



## APPENDIX—V

(Ref. Res. No. 4 (I) of the minutes)

हरक चन्द रारा,  
लेखा शास्त्र व्याख्याता

बी. 43, तिलकनगर,  
जयपुर-302004  
4 मार्च, 1979

कुलसचिव जी,  
राजस्थान विश्वविद्यालय जयपुर।  
द्वारा : अविष्ठाताजी, वारिण्य संकाय।

विषय :—शीघ्र लिपि (हिन्दी-अंग्रेजी) विषय को लोकप्रिय बनाने  
के लिए बी. काम. (पास) पाठ्यक्रम में परिवर्तन।

प्रिय महाशय,

वारिण्य संकाय की 17 मार्च, 1979 को आयोजित होने वाली बैठक की कार्यसूची क्रमांक 8 के अनुसार शिक्षा को कार्यान्मुख बनाने पर विचार किया जाना है।

इस संदर्भ में लेख है कि त्रि-वर्षीय डिग्री पाठ्यक्रम प्राप्त होने के पूर्व इन्टर वारिण्य के छात्रों में शीघ्रलिपि विषय बहुत लोकप्रिय था और वारिण्य के छात्रों को स्टेनोग्राफर के पदों पर नियुक्तियाँ मिलने के अर्द्धे अवसर रहते थे। इस पाठ्यक्रम के प्रारम्भ होने के पश्चात् धीरे धीरे शीघ्रलिपि विषय की मांग कम होती गई और अब इस विषय के अध्यापन की व्यवस्था कुछ ही महाविद्यालयों में है और वहाँ भी इस विषय को लेने वाले छात्रों की संख्या बहुत कम है, जबकि राज्य में हिन्दी, अंग्रेजी के अर्द्धे स्टेनोग्राफर की मांग काफी है।

हायर सैकण्डरी परीक्षा उत्तीर्ण कर जो छात्र बी.काम. (पास) पाठ्यक्रम में प्रवेश लेते हैं उनमें से कई छात्र हायर सैकण्डरी परीक्षा के लिए शीघ्र लिपि या दोनों टाइप ऐच्छिक विषय के रूप में अध्ययन किये होते हैं, अतएव यदि शीघ्रलिपि विषय के अध्यापन की व्यवस्था प्रथम वर्ष से ही कर दी जावे तो इस विषय की मांग बढ़ जावेगी। परीक्षा इस ऐच्छिक विषय के लेने वालों की केवल द्वितीय वर्ष के अन्त में ली जावे, अंग्रेजी में गति प्रति मिनट 100 शब्द से घटाकर 80 शब्द कर दी जावे और टाइप का कोई पत्र अलग से न हो, डिक्टेसन को टाइप करने की अनिवार्यता हो और पत्र शीघ्रलिपि का ही 200 अंकों का रखा जावे।

भवदीय

हरक चन्द रारा

## APPENDIX-VI

*(Ref. Res. No. 4 (2) of the minutes)*

Prem Prakash  
Department of  
Business Administration  
University of Rajasthan

November 28, 1978.

Dear Sir,

We have been teaching Hindi/English Steno-typing in undergraduate classes for more than 20 years, but no notice has so far been taken of change in the need of the society and employment opportunities. Consequently, on the one hand, there is a dearth of efficient steno-graphers and demand of the day in spite of having made heavy investments on the teaching of the subject. Keeping in view my association with the subject as a teacher and also as an examiner at different levels e.g. examinations and recruitments test being conducted by Public Service Commissions, Board of Technical Education, Rajasthan, Ministry of Labour—Government of India, Government, Semi-Government and private organisation, I am enclosing herewith a proposed scheme for effective and employment-oriented teaching of the subject. Since, this proposed scheme is a departure from traditional approach, it is bound to have actions and reaction, but I am sure this will be taken in spirit and letter and implemented with modifications, if required, from the ensuing session 1978-79.

With regards,

Yours truly,  
(P.P. Bhargava)

Shri V.D. Qamra.

Registrar,  
University of Rajasthan.  
Jaipur.

**PROPOSED SCHEME FOR TEACHING HINDI/  
ENGLISH STENO-TYPING IN UNDER-  
GRADUATE CLASSES.**

**First Year T.D.C.**

**Paper—I—**

**Shorthand :**

Max. Marks :	50	
Speed :	60 w.p.m.	
Transcription :	By Hand	
Duration :	3 Hours	
One Passage :	30 Marks	10 Mts. dictation
One Letter :	20 Marks	5 Mts. dictation

**Paper—II—**

**Typewriting :**

Max. Marks :	50
One passage :	25 marks
One letter :	15 marks
One tabulation	10 marks

**Speed :**

English Typewriting	30 w.p.m.
Hindi Typewriting	25 w.p.m.

**Second Year T.D.C.**

**Paper—I—(may be termed as paper A)**

**Shorthand :**

Max. marks	50
Speed :	80 w.p.m.
Transcription :	By Hand
Duration :	1 hour (excluding dictation) one passage of 7 minutes containing 560 words.

**Paper—II—(may be termed as Paper B)**

**Typewriting :**

**Section A :—Type Practice**

Max. Marks :	30	Duration	30 Mts.
One passage :	20 Marks	} With proof corrections.	
One letter :	10 Marks		

**Speed :**

English Typewriting :	40 w.p.m.
Hindi Typewriting :	30 w.p.m.

*Section B :—Type Theory*

Max. Marks :	20	Duration : 2 hours
Syllabus :		Based on present course contents.

**Third Year T.D.C.**

Paper—I—(may be termed as paper A)

**Shorthand :**

Max. Marks :	50
Speed :	100 w.p.m.
Transcription	Direct on Typewriter
Duration :	1 hours (excluding dictation period)
	One passage of 6 mts. duration containing 600 words.

Paper II—(May be termed as Paper B)

*Section A :—Type Practice (With Proof corrections)*

Max. Marks :	30
One passage	20 Marks
One tabulation	10 Marks
Duration :	30 Mts.

*Section B :—Mechanism of Typewriting*

Max. Marks :	20
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(P.P. Bhargava)

## APPENDIX—VII

( *Ref. Res. No. 5 of the minutes* )

1. There is need for the paper : Marketing Management to stay in the course of B.Com. Hons. Part III (Business Administration).

**Grounds :**

- (i) The paper has been deleted from the course so as to take effect from the Examination of 1981, by the Board of studies at its meeting held on 12th/13th September, 1978, ignoring the facts that :
  - (a) The first examination in the Paper is yet to take place in April/May 1979, and
  - (b) The paper (and any other Paper for that matter) should be tried for at least 5-6 years prior to deletion.
- (ii) The importance of Marketing Management to a modern graduate in Commerce in particular and the National economy in general, is too obvious to need elaboration.
- (iii) The B.Com. Hons. Course in Business Administration, as contemplated by the framers, was conceived as a Composite and self-contained one (with Marketing Management as one of the compulsory papers), so as to prepare the Hons. Graduate for facing the real business situations effectively.
- (iv) The founder-framers of the Course were clear in mind that the 'Composite' character of the course (para (iii) above) was relevant also because not all Hons. Graduate would join the M.Com. (Post-graduate) course.
- (v) The papers in the Marketing Area at the Post-graduate level have been sought to be made more advanced broad-based and management oriented as per para 2, 3 and 4 below, so that they neither amount to duplication nor can be treated as substitution for the Paper at the Hons. level.

2. The proposed new syllabus of M.Com. in Marketing Management had been discussed and approved at the Workshop on Management education in 20th Century India, organised by the Department of Business Administration, University of Rajasthan, Jaipur in December 1977. The said syllabus (copy enclosed) should be adopted by the Faculty, so as to be applicable from the Examination of 1980.

3. The proposed new syllabus of M.Com. in the papers : Foreign Trade Management (Optional Group in the Marketing Area) had been discussed and approved at the Workshop on Management Education in 20th Century India, organised by the Department of Business Administration, University of Rajasthan Jaipur, in December 1977. The said syllabus (copy enclosed) should be adopted by the Faculty, so as to be applicable from the Examination of 1980.

4. The scheme of M.Phil. in Business Administration, whether it is for regular students or research scholars or teachers, should include the 'functional areas' of business Administration/Management.

Personnal Management should be one of the Papers of the M.Phil. scheme. Its syllabus is expected to cover Organisational Behaviour (which is the paper at present, and needs be replaced, henceforward). The existing paper on History of Management Thought also covers the behavioural school and special study of prominent behaviourists like Chiris Argyris, Herzberg, Levitt.

Marketing Management should be one of the M.Phil. scheme. Its syllabus is expected to cover 'Economic and Business Policy' (Which is the paper at present, and needs be replaced henceforward). Marketing has to be taught in the background of prevailing economic and business environment.

Hence, appropriately enough, the proposed substituted papers viz., Personnel Management (for Organisational Behaviour) and Marketing Management (for Economic and Business Policy) are bound to be more beneficial to the M.Phil. students in Business Administration, and should, therefore, be adopted by the Faculty so as to carry effect from the M.Phil. (Business Administration) Examination of 1980. The syllabi of the two papers may be left to be framed in consultation with the subject-teachers and experts in the respective areas.

5. The students of M.Phil. (Business Administration), which is a pre-Ph.D. Course, obtained the degree even without the theoretical knowledge of Research Methodology. It is rather funny that the candidates write dissertation without this background.

It is suggested that the dissertation should be split into two parts.

Part I should consist of a paper on Research Methodology, and Part II should consist of Dissertation.

As M.Phil. is a local examination, the above suggestion should carry effect from the Examination of 1980.

Encls . Two

Proposed :

- (1) Syllabus of M.Com. in Paper .: Marketing Management.
- (2) Syllabus of M.Com. in Paper : Marketing Research.

(Ref. Item No. 5 of the agenda)

B. Com. (Hons.) Part III

Hons. Paper-V—Marketing Management.

UNITS.

1. *Introduction* : Meaning, Evolving definitions, Nature and scope of marketing, Importance of marketing.
2. *Product/Planning* : Style and design, New uses, Colour, Distinctive features, Classification of products, Brand and Trade marks, Packaging, Labelling, Product-mix and Product-line policy (Simplification, Standardisation and diversification), Guarantee (Warranty) and Service.
3. *Marketing Research* : Meaning of Sales Research, Market Research and Marketing Research. Importance of marketing research. Areas of marketing research. Techniques of marketing research.
4. *Planning Outlets* : Various channels, Selecting the channels of distribution.
5. *Pricing* : Levels and policies, Break-Even Points, Factors influencing pricing. Price maintenance, Selling terms and conditions-Discount credit. etc.
6. *Planning Markets and Sales* : Questions of terminology: Potential, Forecast, Market potential, Sales quota, Market Forecast, Sales forecast, Market Index, Market factors. Uses of Sales forecast Sales forecasting procedure. Sales forecasting methods.
7. *Promotion Mix* : Determining the promotion programme : Personal selling, Prospecting, Sales resistance, closing the sale, characteristic of successful salesman. Advertising, Media choice, Good copy, Timing, Budgeting, Sales promotion.
8. *Management of Sales Personnel* : Recruitment and selection, Training, Equipment, Motivation, Compensation, Supervision, Controlling salesman.
9. *Rural Marketing* : The product. The pricing strategy. The promotion techniques. The physical distribution.  
*Note* : The paper is to be taught with Indian examples.

*Books recommended :*

1. Lazo and Corbin : Management in Marketing.
2. Canfield, B.R. : Sales Administration—Principles and Problems.



3. Hansen, Harry. L. : Marketing-Text Cases and Reading.
4. Howard, John A. : Marketing Management : Analysis and Decisions.
5. John, Lewis K. : Sales and Marketing Management-Text and Cases.
6. Kotler, Philip : Marketing Management.
7. Davar, R.S. : Modern Marketing Management.
8. Stant-on : Fundamentals of Marketing.
9. Matthews, Jr. Steal : Marketing—An Introductory Analysis.
10. Mecarthy, Jerome E. : Basic Marketing—A Managerial Approach.
11. Neelamegham, S. (ed.) : Marketing Management and the Indian Economy.
12. Fisk, George : Marketing Syastems.
13. अग्रवाल एवं कोठारी : विपणन प्रवन्ध ।
14. जगमोहन सहगल : विपणन प्रवन्ध ।
15. कंसल वी. वी. : विपणन प्रवन्ध ।
16. जैन. एस्. सी. : विपणन प्रवन्ध ।

### M.Com. (Business Administration)

### Marketing Management Part “A”

#### UNITS :

1. *Introduction* : Nature and scope of marketing, Present day importance of marketing, The marketing concept, Marketing management, the application of marketing concept, Marketing approach, logical sequence of marketing management problems.
2. *Product Planning* : Style and design, Fashion, Brand and Trade marks Packaging, Labelling, Product; line policy ( Simplification, standardisation and Diversification ), Product Life Cycle, Guarantees (Warranty) and Service.
3. *Marketing Research* : Nature and importance of marketing research. Areas of marketing research General procedure of marketing research.
4. *Planning Outlets* : Various channels for consumer goods and business goods, Selecting the channels of distribution, cooperation with distributive outlets.
5. *Pricing Strategy* : Factors to consider in pricing, pricing objectives and strategies, Break even points, Uniformity

of prices, Price maintenance, Discount policy, Special selling terms, credit terms.

6. *Corporate/Mage* : Public relations, Emergence of consumer bodies. Government regulations.

### Marketing Management Part "B"

1. *Planning Markets and Sales* : Sales forecast, Period, Uses of sales forecast, Sales forecasting methods. Planning Sales territories, Establishing territorial sales quotes, Assigning Sales territories routing salesman.
2. *Sales Promotion Mix* : Determining the sales promotion programme : Personnal selling, Theories of Selling. Advertising (Media choice, Good copy, Timing, Budgeting, Testing efficacy): Sales Promotion ( Dealer aids, consumer stimulation).
3. *Marketing Organisation* : Purpose of marketing organisation, Bases of departmentalisation, Relation of the marketing department to other selling and non-selling departments, Field organisation, Division of authority and responsibility between head office and field organisation, Organisation of service, Location of service work, Delegation and control of service work.
4. *Management of Sales Personnel* : Recruitment and Selection, Training, Equipment, Remuneration, Motivation, Supervision and Communication, Controlling salesman's expenses, Evaluating performance.
5. *Control of Marketing Operations* : Need for control, Phases of control, Techniques of controlling (accounting, sales analysis, distribution cost accounting and analysis).
6. *Note* :—The paper is to be taught in the Indian perspective.

### Books recommended :

1. Lazo and O Corbin : Management in Marketing.
2. Canfield, B. R. : Sales Administration-Principles and Problems.
3. Hansen, Harry L. : Marketing Text, Cases and Readings.
4. Howard, John A. : Marketing Management : Analysis and Decisions.
5. Johnson, Lewis K. : Sales and Marketing Management Text and Cases.
6. Kelley, E.J. and Lazer, W (eds.) : Managerial Marketing: Perspectives and Viewpoints.

7. May, H.H., and Nolen, H.C. : Sales Management.
8. Nystrom, Paul H. (ed.) : Marketing Handbook.
9. Phelps, D. M., : Sales Management—Policies and Procedures.
10. Phelps, D. M. and Weatiny, J. H. : Marketing Management.
11. Still, R.R., and Coundiff, E.W. : Sales Management : Decision, Policies and Cases.
12. Tosdal, H.R. : Introduction to Sales Management.
13. Davar, R.S. : Modern Marketing Management in the Indian Context.
14. Latif, T.A.A. : Marketing Management in the Developing Countries.
15. Neelamegham. S. (ed.) : Marketing Management and the Indian Economy.
16. Mehta, Subhas C. : Indian Consumer,
17. N.C.A.E.R. : New Perspective in Marketing.
18. Kotler, Philip : Marketing Management.
19. कंसल, वी. वी. : विपणन प्रवन्ध
20. सहगल, जगमोहन : विपणन प्रवन्ध ।
21. अग्रवाल एवं कोठारी : विपणन प्रवन्ध ।
22. जैन, एस.सी. : विपणन प्रवन्ध ।

#### *Journals :*

1. Journal of Marketing, USA.
2. Harvard Business Review.
3. Sales Management USA.
4. Industrial Times.
5. Management Perspectives.
6. Indian Management.

#### **M.Com. (Business Administration)**

#### **Marketing Research : Part "A"**

##### **UNITS.**

1. Definition and Nature of Marketing Research.
2. The purpose and importance of marketing research.
3. Organisation of Marketing Research.
4. Applications of Marketing Research.
5. Basic Marketing Research methods.
6. Specialised Techniques of Marketing Research.

7. Quantitative market analysis (Market factros and market index method).
8. Motivational Research.
9. Advertising Research.

### **Marketing Research Part "B"**

#### **UNITS.**

1. Planning the procedure.
2. Internal business records and their uses.
3. External research.
4. Sample theory-Selecting the sample.
5. Questionnaire designing-collection of data.
6. Tabulation of Data.
7. Analysis and Interpretation of data.
8. Report writing.
9. Application or Follow up.

#### ***Books racommended :***

1. Brown, L.O. : Marketing and Distribution Research.
2. Crisp, R.D. : Marketing Research.
3. Bradford, E.S. : Marketing Research.
4. Delens, A.H.R. : Principles of Market Research.
5. Luck, Wales, and Taylor : Marketing Research.

## APPENDIX—VIII

( *Ref. Res. No. VIII of the minutes* )

The Convener,  
Board of Studies,  
Accountancy and Business Statistics,  
University of Rajasthan,  
JAIPUR.

No. M.C.A./48968

Dated : 3-3-79

Dear Sir,

In view of the recent developments and changes in the Scientific study of Accountancy and Business Statistics as well as Managerial Economics and Management, it is being increasingly felt that without a proper grounding in Mathematics (Elementary as prescribed for C.A. students), it would be well high difficult for the students of commerce to understand the tools and techniques for making an analytical study of Accounting and Managerial problems. The Knowledge of elementary and basic mathematics has also become imperative for advanced learning of these subjects.

It is, therefore, proposed and suggested that Elementary Mathematics may kindly be introduced as a compulsory paper in First Year Commerce and the course content of this paper should be the same as prescribed for the Intermediate courses of C.A.

If the Board of Studies and the Faculty of Commerce take this decision, It is needless to say that students of Commerce would be benefited much.

A further suggestion may also be made for some changes in the Scheme of Courses prescribed for Second and Third Year Commerce Examinations. At present the papers of Accountancy, both compulsory and optional, are as given below :

Second Year	Third Year
Compulsory : 1. Financial & Cost Accounting	1. Income Tax
2. Statistical Methods	2. Auditing
Optional : 1. C.Q.M.	1. C.Q.M. (Cost Accounting)
2. Taxation : Law & Practice	2. Taxation : Law and Practice.

Some consensus has developed, of late, that the second portion of the Paper "Financial Accounting & Cost Accounting" which exclusive covers Cost Accounting from Introduction to Unit Costing should be excluded from this paper and a few new topics of Accountancy which are of immense importance and are not taught at any level from First Year to M. Com. should be included in the course content of this paper.

The second part of the aforesaid paper covering the course of Cost Accountancy so deleted. From this paper may be added in the course content of the optional paper : C. Q. M. (Cost Accountancy) of the III Year and this paper may be made compulsory in place of Auditing which is at present second compulsory paper of III Year, Auditing should be made an optional paper.

The course content of Second Year C. Q. M. (Optional paper) should also be changed. A few topics of this paper can *easily be included in the course content of this paper* Statistical Methods (compulsory paper) and in place of such deleted topics, some topics of Higher Mathematics used in Tools of Techniques of Economic Analysis can be included to make the course more rewarding and useful.

I hope the foregoing proposals and suggestions would kindly be placed before the Hon'ble members of the Board of Studies for sympathetic consideration and for being recommended to the Faculty for making necessary changes.

Your's faithfully,  
Sd/-  
J. P. Srivastava  
Incharge (M.Com.)

Forwarded with the request that the matter may please be duly considered and discussed at the Faculty Meeting for onward transmission to the Academic Council.

Sd/-  
M. L. Mishra  
Director

No. M. C. A./48959-60

Copy forwarded for information and necessary action to :

1. The Dean, Studies in Commerce, University of Rajasthan, Jaipur.
2. The Registrar, University of Rajasthan, Jaipur.

Sd/-  
J. P. Srivastava

MINUTES OF THE SPECIAL MEETING OF THE BOARD  
OF STUDIES IN MEDICINE AND PHARMACEU-  
TICS HELD ON THE 17TH AUGUST, 1979 IN  
THE VICE-CHANCELLOR'S SECRETARIAT  
( NEW BUILDING ) JAIPUR.

Present :

- |                     |                        |
|---------------------|------------------------|
| 1. Dr. M.K. Patni   | ( <i>Convener</i> )    |
| 2. Dr. M.L. Sharma  | Member                 |
| 0. Dr. M. R. Jain   | ,,                     |
| 4. Dr. S. C. Sharma | ,,                     |
| 5. Dr. B. L. Asawa  | ,,                     |
| 6. Dr. R. K. Pathak | <i>External Member</i> |
| Dr. R.A. Sharma     | <i>Special Invitee</i> |

*N.B.*—Dr. S.P. Moongia, Ajmer, Dr. S.D. Dandiya, Bikaner, Dr. (Mrs.) Sheela Sharma, Jodhpur, Dr. C.K. Joshi, Bikaner and Prof. Em. Dr. Shurvir Singh, Udaipur, could not attend the meeting.

(1) *The Board noted that —*

- ( i ) The Syndicate vide its Res. No. 7, dated the 3rd, October, 1978 accepted the amendments to clause (1) of S. 42 E as under :—

The proposed list of subjects given under the draft of the amended clause ( i ) of Statute 42-E *be re-written* so as to read as follows :

- ( i ) Medicine and Allied Specialities,
- ( ii ) Surgery and Allied Specialities,
- ( iii ) Ophthalmology and EN.T,
- ( iv ) Gynaecology and Obstetrics,
- ( v ) Community Medicine,
- ( vi ) Anatomy
- ( vii ) Physiology

- (viii) Bio-Chemistry,
  - ( ix ) Pathology and Microbiology,
  - ( x ) pharmacology
  - ( xi ) Forensic Medicine.
- ( ii) The Senate vide its Res. No. 8 (I), dated the 25th/ 26th March, 1979 accepted the aforesaid amendment to clause (1) of S. 42-E and the Chancellor has been pleased to accord his assent on the same.
- (iii) The Term of the present Medical Education and Research Committees *Expired* on 21st July, 1979.

Accordingly, *the Board constituted* the following Medical Education and Research Committees for a fresh term of 3 years commencing on the 17th August, 1979 in each of the subjects or groups of the subject as follows :

*I Medicine and Allied Specialities :*

- (1) Dr. Ramawatar Sharma, Prof. & Head of the Department of Medicine, J.L.N. Medical College, Ajmer.
- (2) Dr. H. K. Bedi, Prof. & Head of the Department of Medicine, R.N.T. Medical College, Udaipur.
- (3) Dr. K. Banerjee, Prof. & Head of the Department of Medicine, S. N. Medical, College, Jodhpur.
- (4) Dr. S.N. Mishra, Prof. & Head of the Department of Medicine, S. P. Medical College, Bikaner
- (5) Dr. (Mrs.) S. Saxena, Prof. & Head of the Department of Paediatrics, S.M S. Medical College, Jaipur.
- (6) Dr. P.L. Nawalkha, Prof. & Head of the Department of Radiology S.M.S. Medical College, Jaipur.
- (7) Dr. N. K. Mathur Prof. & Head of the Department of Skin and V.D., S.M.S. Medical College, Jaipur.
- (8) Dr. R. D. Singh, Prof. & Head of the Department of Tuberculosis and Chest diseases S.N. Medical College, Jodhpur.
- (9) Dr. Adwani, Prof. & Head of the Department of Psychiatry, R.N.T. Medical College, Udaipur.



## II. *Surgery and Allied Specialities :*

- (1) Dr. G. S. Jhalla, Prof. & Head of the Department of Surgery, J.L.N. Medical College, Ajmer.
- (2) Dr. M. P. Singh, Prof. & Head of the Department of Surgery, S. P. Medical College, Bikaner.
- (3) Dr. P. K. Sethi, Prof. & Head of the Department of Orthopaedic Surgery, S.M.S. Medical College Jaipur.
- (4) Dr. G. C. Sharma, Prof. & Head of the Department of Surgery, S.M.S. Medical College, Jaipur.
5. Dr. K. C. Gangwal, Prof. & Head of the Department of Uro-Surgery, S.M.S. Medical College, Jaipur.
6. Dr. K. C. Sogani, Prof. & Head of the Department of Paediatric Surgery, S.M.S. Medical College, Jaipur.
7. Dr. Dharkar, Prof. & Head of the Department of Neuro-Surgery, S.M.S. Medical College, Jaipur.
8. Dr. (Mrs.) S. Chatterjee Prof. & Head of the Department of Anaesthesiology, S.P. Medical College, Bikaner.
9. Dr. S.K. Pande Prof. & Head of the Department of Surgery, S. N. Medical College, Jodhpur.

## III. *Ophthalmology and E.N.T. :*

1. Dr. M.R. Jain, Prof. & Head of the Department of Ophthalmology, R.N.T, Medical College, Udaipur.
2. Dr. G.K. Sharma, Prof. & Head of the Department of Ophthalmology, J.L.N. Medical College, Ajmer.
3. Dr. U.K. Satsangi, Prof. & Head of the Department of Ophthalmology, S. P. Medical College, Bikaner.
4. Dr. D L. Chhangani Prof. & Head of the Department of E.N.T. , S.M.S. Medical College, Jaipur.
5. Dr. K. C. Rai, Prof. & Head of the Department of E. N.T., R.N.T. Medical College, Udaipur.

## IV. *Gynaecology and Obstetrics :*

1. Dr. (Miss) Hitesh Bhargava, Prof. & Head of the Department of Obst. and Gynaecology, J.L.N. Medical College, Ajmer.

2. Dr. (Miss) Gayatri Vijai, Prof. & Head of the Department of Obstetrics & Gynaecology, S. P. Medical College, Bikaner.
3. Dr. (Mrs.) Pushpa Gupta, Prof. and Head of the Department of Obst. & Gyn., S.M.S. Medical College, Jaipur.
4. Dr. (Mrs.) S. Sharma, Prof. & Head of the Department of Obst. & Gyn., S.N. Medical College, Jodhpur.
5. Dr. (Mrs.) Chand Kiran, Prof. and Head of the Department of Obst. & Gyn., R.N.T. Medical College, Udaipur.

V. *Community Medicine.* :

1. Dr. G.M. Mathur, Prof. & Head of the Department of Community Medicine, J.L.N. Medical College, Ajmer.
2. Dr. C.K. Joshi, Professor & Head of the Department of Community Medicine, S.P. Medical College, Bikaner.
3. Dr. T. P. Jain, Prof. & Head of the Department of Community Medicine, S.M.S. Medical College, Jaipur.
4. Dr. Rameshwar Sharma, Prof. & Head of the Department of Community Medicine, S.N. Medical College, Jodhpur.
5. Dr. P. N. Sharma, Prof. & Head of the Department of Community Medicine, R.N.T. Medical College, Udaipur.

VI *Anatomy* :

1. Dr. R.P. Chaturvedi, Prof. & Head of the Department of Anatomy, J.L.N. Medical College, Ajmer.
2. Dr. N.K. Harneja, Prof. & Head of the Department of Anatomy, S. P. Medical College, Bikaner,
3. Dr. K. C. Jain, Prof. & Head of the Department of Anatomy, S.M.S. Medical College, Jaipur.
4. Dr. M.S. Rathore. Prof. & Head of the Department of Anatomy, S. N. Medical College, Jodhpur.

5. Dr. M.K. Patni, Prof. & Head of the Department of Anatomy, R.N.T. Medical College, Udaipur.

## VII *Physiology :*

1. Dr. S. P. Moongia, Prof. & Head of the Department of Physiology, J.L.N. Medical College, Ajmer.
2. Dr. B. B. Maitrya, Prof. & Head of the Department of Physiology, S. P. Medical College, Bikaner.
3. Dr. Somnath, Prof. & Head of the Department of Physiology, S.M.S. Medical College, Jaipur
4. Dr. C. L. Pathak, Professor & Head of the Department of Physiology, S. N. Medical College, Jodhpur.
5. Dr. M. L. Gupta, Prof. & Head of the Department of Physiology, R.N.T. Medical College, Udaipur.

## VIII *Bio-Chemistry.*

In the absence of the names of the Heads of the Departments of Bio-Chemistry, the Board could not recommend the names, however, *the Board recommended* that the Principals of the affiliated Medical College be requested to give the names of the Heads of the Departments in Bio-Chemistry in their colleges and the same be considered as appointed by the Board of Studies.

## IX *Pathology and Micro-Biology :*

1. Dr. D.P. Gupta, Professor & Head of the Department of Pathology, J.L.N. Medical College, Ajmer.
2. Dr. H. L. Arora, Prof. & Head of the Department of Pathology & Micro-Biology, S. P. Medical College, Bikaner.
3. Dr. H.N. Mangal, Prof. & Head of the Department of Pathology, S.M.S. Medical College. Jaipur.
4. Dr. K.N. Sachdev, Prof. & Head of the Department of Pathology, S. N. Medical College, Jodhpur.
5. Dr. O. P. Gupta, Prof. & Head of the Department of Pathology, R.N.T. Medical College, Udaipur.

### X Pharmacology :

1. Dr. S. K. Sharma, Prof. & Head of the Department of Pharmacology, J.L.N. Medical College, Ajmer.
2. Dr. \_\_\_\_\_ Head of the Department of Pharmacology, S.P. Medical College, Bikaner.
3. Dr. F.S.K. Barar, Prof. & Head of the Department of Pharmacology, S.M.S. Medical College, Jaipur.
4. Dr. N. K. Khanna, Prof. & Head of the Department of Pharmacology, S.N. Medical College, Jodhpur.
5. Dr. K.P. Singh, Prof. & Head of the Department of Pharmacology, R.N.T. Medical College, Udaipur.

### XI Forensic Medicine :

1. Dr. B. L. Asawa, Reader & Head of the Department of Forensic Medicine, J.L.N. Medical College, Ajmer.
2. \_\_\_\_\_, Head of the Department of Forensic Medicine, S. P. Medical College, Bikaner.
- 3.. Dr. M. R. Goyal, Reader & Head of the Department of Forensic Medicine, S.M.S. Medical College, Jaipur.
4. Dr. P. Dayal, Reader & Head of the Department of Forensic Medicine, S. N. Medical College, Jodhpur,
5. Dr. B.P. Gupta, Reader & Head of the Department of Forensic, Medicine, R. N.T. Medical College, Udaipur.

2. The Board considered the points raised by Dr. Vinod Shah (Member Senate) with regard to publication of papers based on the thesis for a Post-graduate examination under the Faculty of Medicine as contained in his letter dated the 9th June, 1979 (*Vide Appendix I*).

*Resolved that* the consideration *be postponed* for the next meeting. Meanwhile the Board desired that the practice in other Faculties together with the comments of the office in the matter be circulated amongst the members of the Board.

The meeting ended with a vote of thanks to the Chair.

Dr. M. K. Patni  
Convener

## APPENDIX—I

( *Ref. Res. No. 2 of the minutes* )

Copy of letter dated 9th June, 1979 received from  
Dr. Vinod Shah : Member-Senate to the Registrar

Sub. : Clarification of the point No. 4 of Part 5(A) of O. 278-E.

Kindly let me know clarification of the point No. 4 mentioned in the 5(A) of O. 278-E :

1. Whether the thesis is the property of University ?
2. Whether a candidate or his guide can publish a paper from thesis before its approval (Approved thesis) ?
3. Whether thesis or dissertation is property of University ? Once a candidate is registered for M.D./M.S. and has been allotted a subject for doing thesis/dissertation till it is approved by External Examiner.
4. Is it a fact that candidate can publish a paper after approval of his thesis and that too with the permission from the University.
5. To whom the permission will be given for publishing a paper from the approved thesis. Candidate who completed the thesis or the Guide under whom candidate has done the thesis work.
6. Is it a fact that first preference or first name will be of a candidate for publishing a paper to whom the thesis belongs ?

I hope that the clarification will be sent to me at my residential address at your earliest.

## राजस्थान विश्वविद्यालय, जयपुर

दिनांक 23 अगस्त, 1979 को मध्यान्ह 12 बजे एवं दिनांक 24 अगस्त, 1979 को अपराह्न 3.00 बजे राजस्थान विश्वविद्यालय कुलपति सचिवालय, जयपुर में आयोजित आयुर्वेद अध्ययन मण्डल की विशेष बैठक का कार्यवाही विवरण ।

### उपस्थिति :

1. वैद्य मदन लाल शर्मा (संयोजक)
2. वै० घनश्याम शास्त्री
3. वै० अमर नाथ शर्मा
4. वै० मोहन लाल भारद्वाज
- × 5. वै० हनुमत्सहाय शर्मा
6. वै० रंग नाथ शर्मा
- × 7. वै० हरि प्रसाद शर्मा
8. वै० श्री लक्ष्मीनारायण शर्मा
- × 9. वै० नरहरि शास्त्री
10. वै० वासुदेव शास्त्री
11. वै० मदन कुमार शर्मा
12. वै० ईश्वर दास स्वामी
13. वै० श्री हरि शंकर शर्मा
14. वै० दीलत राम चतुर्वेदी
15. वै० प्रभुदयाल पारीक

(× चिन्हित सदस्य 24 अगस्त, 79 को अनुपस्थित रहे)

(अ) मण्डल ने नवीन सदस्य श्री वासुदेव शास्त्री, प्रोफेसर काय-चिकित्सा विभाग, म मो. मा राजकीय आयुर्वेद महाविद्यालय, उदयपुर एवं श्री दीलत राम चतुर्वेदी, भगतपुर का हार्दिक स्वागत किया ।

(ब) सुप्रसिद्ध आयुर्वेद चिकित्सक स्वर्गीय राजवैद्य पण्डित रामदयालु शर्मा, प्रोफेसर काय चिकित्सा विभाग, राष्ट्रीय आयुर्वेद संस्थान,

जयपुर के असामयिक निधन पर निम्न लिखित शोक प्रस्ताव दो मिनट मौन खड़े रहकर पारित किया :—

“राजस्थान विश्वविद्यालय के आयुर्वेद अध्ययन मण्डल की यह सभा आयुर्वेद-जगत के सुप्रसिद्ध विद्वान् चिकित्सक तथा शिक्षा शास्त्री स्वर्गीय राजवैद्य पण्डित रामदयालु शर्मा, आचार्य, काय चिकित्सा, स्नातकोत्तर विभाग, राष्ट्रीय आयुर्वेद संस्थान, जयपुर के असामयिक निधन पर गहन हार्दिक संवेदना प्रकट करती है तथा परमपिता परमात्मा से यह प्रार्थना करती है, कि वह दिवंगत आत्मा को चिरशान्ति प्रदान करे एवं शोक संतप्त परिवार को धैर्य धारण एवं शोक सहिष्णुता, प्रदान करे।

- (स) इसके पश्चात् सभा की कार्यवाही कुछ समय के लिये स्थगित कर दी गई।
- (द) कुछ समयोपरान्त मण्डल की बैठक मंगलाचरण के साथ पुनः प्रारम्भ हुई।

1. संयोजक महोदय ने मण्डल की गत बैठक की पुष्टि कराना परमावश्यक मान कर मण्डल के सदस्यों की सर्वसम्मति से गत दिनांक 26 एवं 27 मार्च, 1979 की बैठक के कार्यवाही विवरण की पुष्टि का निर्णय लिया तथा कार्यवाही विवरण के वाचनोपरान्त उसकी पुष्टि की गई।

2. राजस्थान विश्वविद्यालय की हैण्डबुक के परिनियम 42-एफ (S. 42-F) के प्रावधानों [कार्यालय द्वारा प्रेषित स्पष्टीकरण (परिशिष्ट 1) का प्रतिवेदन कर] को मण्डल ने निम्नलिखित अभ्युक्तियों के साथ अभिलिखित किया :—

- (1) परिनियम 42-एफ : (2) की अन्तिम पंक्ति में Medicine or Ayurvedic Drugs के पूर्व 'Ayurvedic' शब्द प्रति-स्थापित किया जाये।
- (2) परिनियम 42-एफ : की धारा (3) के प्रथम वाक्य के अन्त में 'in rotation' शब्दों को निरस्त किया जावे—श्रीचित्त यह है कि प्रदेश में संकाय से सम्बन्धित केवल तीन महाविद्यालय हैं तथा ऐसे में यदि rotation का प्रावधान हुआ तो तीन वर्षो-परान्त आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों का निर्माण असम्भव हो जाएगा। rotation का प्रावधान तभी उचित होगा जबकि प्रदेश में 6 से अधिक महाविद्यालय सम्बद्ध हों।

3. मण्डल ने परिनियम 42-एफ : (1), (2), एवं (3) के प्रावधानान्तर्गत तीन वर्ष की कालावधि (23 अगस्त 79 से 24 अगस्त, 1979 तक) के लिये निम्नलिखित आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों (Ayurvedic Education and Research Committees) का गठन किया :—

(i) संहिता विज्ञान, संस्कृत, सिद्धान्त एवं इतिहास विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति ।

(1) वैद्य धनश्याम शास्त्री,  
स्नातक विभागाध्यक्ष,  
संहिता विज्ञान, संस्कृत सिद्धान्त एवं इतिहास विभाग,  
म० मो० मा० राजकीय आयुर्वेद महाविद्यालय, उदयपुर ।

(2) श्री प्रभुदत्त शर्मा,  
स्नातक विभागाध्यक्ष,  
मौलिक सिद्धान्त संहिता, संस्कृत एवं इतिहास विभाग,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।

(3) वैद्य शंकर त्रिवेदी,  
स्नातक विभागाध्यक्ष,  
मौलिक सिद्धान्त संहिता, संस्कृत एवं इतिहास विभाग,  
श्री परशुरामपुरिया आयुर्वेदिक महाविद्यालय, मीकर ।

(4) वैद्य ज्योतिमित्र, (वाह्य सदस्य)  
मौलिक सिद्धान्त विभाग,  
बनारस हिन्दू विश्वविद्यालय,  
वाराणसी ।

(5) वैद्य मधुनूदन शास्त्री, (वाह्य सदस्य)  
मौलिक सिद्धान्त विभाग,  
आयुर्वेद महाविद्यालय, गुजरात आयुर्वेद विश्वविद्यालय,  
जामनगर ।

(ii) शरीर रचना विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

(1) वैद्य अमर नाथ शर्मा,  
शरीर रचना विभागाध्यक्ष,  
म० मो० मा० राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।



- (2) श्री राम प्रसाद मिश्र,  
शरीर रचना विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।
- (3) वैद्य हरिचंकर शर्मा,  
शरीर रचना विभागाध्यक्ष,  
श्री परशुरामपुरिया आयुर्वेदिक महाविद्यालय, सीकर ।
- (4) डा० श्री निवास चतुर्वेदी (वाह्य सदस्य)  
मुकुन्द फार्मसी  
जौहरी बाजार, जयपुर ।
- (5) जगनाथ व्यास, (वाह्य सदस्य)  
मस्तनाथ आयुर्वेद कालेज,  
स्यल-बोहर, रोहतक  
हरियाणा ।

(iii) शरीर क्रिया विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

- (1) श्री जितेन्द्र कुमार भार्गव,  
विभागाध्यक्ष, शरीर क्रिया,  
राष्ट्रीय आयुर्वेद संस्थान,  
जयपुर ।
- (2) श्री अमर नाथ शर्मा,  
शरीर क्रिया विभागाध्यक्ष, न० मो० ना० राज० आयु०  
महाविद्यालय, उदयपुर ।
- (3) डा० रामेश्वर दयालु (वाह्य सदस्य)  
निदेशक, आयुर्वेद विभाग,  
हरियाणा, चंडीगढ़ ।
4. श्री सुदेव चन्द्र पाराशरी, (वाह्य सदस्य)  
प्रो० कन्या आयुर्वेद महाविद्यालय  
खानपुर,  
रोहतक हरियाणा ।
5. रिक्त.....

(v) द्रव्यगुण विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वैद्य हनुमत्सहाय शर्मा,  
द्रव्यगुण विज्ञान विभागाध्यक्ष,  
म० मो० मा० आयुर्वेद महाविद्यालय,  
सीकर ।
2. प्रो० हरिशंकर शर्मा,  
द्रव्यगुण विज्ञान विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान,  
जयपुर ।
3. वैद्य राम प्रसाद शर्मा,  
द्रव्यगुण विज्ञान विभागाध्यक्ष,  
श्री प० रा० आयुर्वेद महाविद्यालय,  
सीकर ।
4. श्रीराम सुशील सिंह, (वाह्य सदस्य)  
रीडर, आयुर्वेद विभाग  
बनारस हिन्दू विश्वविद्यालय,  
वाराणसी ।
5. ईश्वरदास स्वामी, (वाह्य सदस्य)  
सुन्दर भवन  
सुन्दर मार्ग, तिलक नगर,  
जयपुर ।

(v) रसशास्त्र भैषज्य कल्पना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वैद्य मदन लाल शर्मा,  
रसशास्त्र भैषज्य कल्पना स्नात्कोत्तर विभागाध्यक्ष,  
म० मो० मा० राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।
2. श्री लक्ष्मी नारायण शर्मा,  
रसशास्त्र भैषज्य कल्पना विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान,  
जयपुर ।

3. श्री बृज मोहन वर्मा,  
रसशास्त्र भूषज्य कल्पना, विभागाध्यक्ष.  
श्री प० रा० आयुर्वेद महाविद्यालय,  
सीकर ।
4. डॉ० दत्तात्रेय अनन्त कुलकर्णी (वाह्य सदस्य)  
सी० 3/5 व्हीर बैंक कालोनी.  
लखनऊ-22600
- 5 श्री कृष्ण दत्त जोशी, (वाह्य सदस्य)  
ललित हरि आयुर्वेद कॉलेज,  
पीलीभीत ।

(vi) रोगविज्ञान एवं विकृति विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वैद्य रंग नाथ शर्मा,  
रोग विज्ञान विभागाध्यक्ष,  
म० मो० मा० राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।
2. श्री राधाकान्त शर्मा,  
रोगविज्ञान विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान.  
जयपुर ।
3. श्री शिवचरण ध्यानी, (वाह्य सदस्य)  
रोग विज्ञान विभाग,  
गुजरात आयुर्वेद विश्वविद्यालय,  
जामनगर ।
4. श्री दौलतराम चतुर्वेदी, (वाह्य सदस्य)  
भूतपूर्व निदेशक आयुर्वेद विभाग राजस्थान,  
दही वालों की गली,  
भरतपुर ।
5. रिक्त

(vii) स्वस्यवृत्त विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. श्री हरि प्रसाद शर्मा,  
स्वस्यवृत्त विभागाध्यक्ष,

- श्री ५० रा० आयुर्वेद महाविद्यालय,  
सीकर ।
2. श्री रमाकान्त शर्मा,  
स्वस्थवृत्त विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।
3. श्री पूर्ण नन्द शास्त्री,  
स्वस्थवृत्त विभागाध्यक्ष,  
म० मो० मा० राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।
4. सुरेश चन्द्र चतुर्वेदी, (वाह्य सदस्य)  
43, महन्त रोड, विली पार्से ईस्ट  
बम्बई-400057.
5. श्री मुरली मनोहर शरण, (वाह्य सदस्य)  
स्थल सुरज पोल,  
उदयपुर ।

(viii) अगदत्तत्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वैद्य राम प्रसाद शर्मा,  
अगदत्तत्र विभागाध्यक्ष,  
५० रा० आयुर्वेद महाविद्यालय,  
सीकर ।
2. श्री द्रव्येश्वर झा,  
अगदत्तत्र विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान,  
जयपुर ।
3. श्री जगदीश प्रसाद शर्मा, (वाह्य सदस्य)  
अगदत्तत्र विभागाध्यक्ष,  
म० मो० मा० राजकीय आयुर्वेद महाविद्यालय,  
उदयपुर ।
4. श्री देवी माधव शास्त्री, (वाह्य सदस्य)  
आयुर्वेदिक कॉलेज  
ग्वालियर ।

5. श्री मुरली लाल मिश्र, (वाह्य सदस्य)  
जगदम्बा आयुर्वेद कॉलेज,  
दांता हाउस, चांदपोल बाजार, जयपुर ।

(x) प्रसूतितंत्र स्त्री, बाल रोग विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वैद्य राम भरोसी मिश्र,  
विभागाध्यक्ष प्रसूतितंत्र,  
म० मो० मा० राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।
2. श्री वेद प्रकाश शर्मा,  
प्रसूतितंत्र विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थाद, जयपुर ।
3. श्रीमती प्रेमवती तिवाड़ी, (वाह्य सदस्य)  
विभागाध्यक्ष प्रसूतितंत्र,  
वनारस हिन्दू विश्वविद्यालय,  
वनारस ।
4. डॉ० शशि रमेश, (वाह्य सदस्य)  
गुप्त एवं स्त्री रोग विभागाध्यक्ष,  
रवीन्द्रनाथ टैगोर आयु विज्ञान महाविद्यालय,  
उदयपुर ।
5. रिक्त.....  
.....

(x) काय चिकित्सा विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

1. वै० राम प्रकाश स्वामी,  
काय चिकित्सा स्नातकोत्तर विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान, जयपुर ।
2. वै० ओम प्रकाश शर्मा,  
काय चिकित्सा विभागाध्यक्ष,  
म०मो०मा०राज०आयु० महाविद्यालय,  
उदयपुर ।

3. वै० शंकर त्रिवेदी,  
काय चिकित्सा विभागाध्यक्ष,  
श्री पराशरामु० महाविद्यालय,  
फरीकट ।
4. श्री प्रदुमन लाल, (बाह्य सदस्य)  
हुर्गु हुर्गु, उन्नेर नगर,  
बाराणसी ।
5. श्री सी०पी० शुक्ला, ( बाह्य सदस्य )  
प्रो० गुजरान आधुनिक विश्वविद्यालय,  
बाननगर ।

(xi) शालाक्य तंत्र विषयक आधुनिकीय शिक्षण एवं अनुसंधान समिति :

1. श्री प्रदुमन पारीक,  
शालाक्य विभागाध्यक्ष,  
राष्ट्रीय आधुनिक संस्थान,  
जयपुर ।
2. वै० तरहरि पंड्या,  
शालाक्य विभागाध्यक्ष,  
म०मो०ना०राज०आधु० महाविद्यालय,  
जयपुर ।
3. रिक्त .....
4. श्री दीनराम चतुर्वेदी (बाह्य सदस्य)  
डू०डू० निदेशक, आधुनिक विभाग राजस्थान,  
वही वालों की गली,  
भरतपुर ।
5. श्री प्रभाकर जनादेन देव पांडे (बाह्य सदस्य)  
प्रो० शालाक्य विभाग,  
बनारस हिन्दू विश्वविद्यालय,  
बनारस ।

(xii) शालाक्य तंत्र विषयक आधुनिकीय शिक्षण एवं अनुसंधान समिति :

1. वै० मदन कुमार शास्त्री,  
शालाक्य तंत्र विभागाध्यक्ष,

म०मो०मा०राज० आयुर्वेद महाविद्यालय,  
उदयपुर ।

2. डा० श्री कृष्ण शर्मा,  
शालाक्यतंत्र विभागाध्यक्ष,  
राष्ट्रीय आयुर्वेद संस्थान,  
जयपुर ।
3. श्री वृजमोहन वर्मा,  
शालाक्यतंत्र विभागाध्यक्ष,  
श्री प०रा०आयु० महाविद्यालय,  
सीकर ।
4. श्री टी०सी० जैन, (बाह्य सदस्य)  
प्रो० शल्यतंत्र, गुजरात आयुर्वेद विश्वविद्यालय,  
जामनगर ।
5. डा० रामानुज मिश्र, (बाह्य सदस्य)  
प्रो० स्टेट आयुर्वेद कालेज,  
लखनऊ ।

ध्यातव्य :—श्री अमर नाथ शर्मा, शरीर क्रिया विज्ञान विभागाध्यक्ष;  
श्री पूर्णनन्द शास्त्री, स्वस्थवृत्त विभागाध्यक्ष; श्री जगदीश  
प्रसाद शर्मा, स्वस्थवृत्त विभागाध्यक्ष; तीनों श्री मदन  
मोहन मालवीय राजकीय आयुर्वेद महाविद्यालय, उदयपुर  
में कार्यरत हैं की सदस्यता तभी वैध होगी जब प्राचार्य,  
आयुर्वेद महाविद्यालय, उदयपुर से यह प्राप्त हो जाए कि  
उक्त विभागों के विभागाध्यक्ष ये तीन व्यक्ति हैं अन्यथा  
जो भी विभागाध्यक्ष होगा उसका नाम अंकित किया  
जावे ।

4. आयुर्वेद संकाय की निश्चय संख्या 10 दिनांक 23 एवं 24 जुलाई,  
1979 के संदर्भ में अकादमी परिपद के निश्चय संख्या 9 दिनांक 11 मार्च  
1979 द्वारा प्रेषित श्री राजेश्वर प्रसाद, सचिव, स्वास्थ्य एवं परिवार कल्याण  
मंत्रालय, भारत सरकार, नई दिल्ली के राष्ट्रीय आयुर्वेद विज्ञान शिक्षण प्रणाली  
विषयान्तर्गत पत्रांक सं जेड./28015/16/78/पी.पी (एच) दिनांक 1 दिसम्बर,  
1978 परिशिष्ट (II) पर विचार विमर्श किया ।

मण्डल ने इस विषय पर लम्बे अन्तराल तक गहन विचार विमर्शोपरान्त निश्चय किया कि सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार, नई दिल्ली को राष्ट्रीय चिकित्सा शिक्षा नीति के संदर्भ में इस विश्व-विद्यालय के विचार त्रिन्दू निम्नलिखित रूप में प्रेषित किये जाएं :--

1. सर्वविध भारतीय चिकित्सा प्रणालियों में आर्थिक प्रशासनिक, शैक्षणिक स्तर में समानता हो। समस्त चिकित्सा प्रणालियों की शक्ति को महसूस किया जाए और उनको समझा जाए।
2. सर्वविध चिकित्सा प्रणालियों के कितने स्वास्थ्य चिकित्सकों की आवश्यकता है इसका सही मूल्यांकन किया जाए।
3. प्रत्येक प्रणाली के मौलिक सिद्धान्तों को अधुण्डन रखते हुए एक स्वास्थ्य एवं चिकित्सा आयोग का गठन किया जाए जिसमें कि सर्व-पद्धतियों की चिकित्साओं का समावेश हो।
4. भारत के सभी प्रान्तों में भारतीय चिकित्सा विश्वविद्यालयों की स्थापना एवं तत्सम्बन्धित प्रणालियों की विभिन्न संकायों का गठन किया जावे। भारतीय समाज की आवश्यकताओं को ध्यान में रखते हुए मेडिकल एजुकेशन का पुनर्गठन किया जाए।
5. सर्वविध चिकित्सा प्रणालियों के चिकित्सकों का एक राष्ट्रीय सेवा आयोग का गठन किया जाय जिसके द्वारा राष्ट्र की पूर्ण रूप से सेवा की जाय।
6. सर्वविध स्वास्थ्य सेवाओं में कार्यरत कर्मचारियों के लिए शिक्षा व कार्य दक्षता के पुनर्भ्यास की समुचित व्यवस्था होनी चाहिए।
7. प्राचीन तथा अर्वाचीन जो भी चिकित्सा ज्ञान उपलब्ध है उसका संकलन करके भारतीय चिकित्सा प्रणाली का निर्माण किया जाय।

स्रोतकोत्तर परीक्षाओं के लिये प्रत्येक चिकित्सा प्रणाली के मौलिक सिद्धान्तों के आधार वे किस प्रकार परस्पर में अनुपूरक हों, शोध कार्य के साथ ही भारतीय चिकित्सा प्रणाली का निर्माण किया जावे।

8. भारतीय चिकित्सा शिक्षा प्रणाली की भाषा का माध्यम राष्ट्र भाषा हिन्दी हो, विकल्प में संस्कृत, अंग्रेजी, उर्दू व क्षेत्रीय भाषाएँ हो।



5. अकादमी परिपद की गत दिनांक 16 नवम्बर, 1978 की सभा की निश्चय संख्या 5 के संदर्भ से मण्डल को, प्रतिवेदित किया गया कि :—

- (अ) अकादमी परिपद ने अपनी निश्चय संख्या 2(I)(C) दिनांक 27 मई, 1974 के द्वारा आयुर्वेद संकाय की निश्चय संख्या 2(म) दिनांक 21 एवं 22 मार्च, 1974 में अध्ययन मण्डल की संस्तुति पर संकाय द्वारा प्रस्तावित डिप्लोमा पाठ्यक्रम के आरम्भन की संस्तुति पर विचार अस्युगित किया था ।
- (ब) इसी सम्बन्ध में सेनेटर श्री नन्द किशोर शर्मा के दिनांक 20 सितम्बर 78 के पत्र ( परिशिष्ट III ) पर परिपद ने विचार किया ।
- (स) इस समय परिपद को यह प्रतिवेदित किया गया कि आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 8 दिनांक 30/31 अक्टूबर, 1979 के द्वारा एक वर्षीय डिप्लोमा पाठ्यक्रम का प्रारूप संस्तुत किया गया था जिसे आयुर्वेद संकाय ने अपनी निश्चय संख्या 2(म) दिनांक 21 एवं 22 मार्च, 1974 द्वारा अग्रेषित किया था ।
- (द) तदुपरांत परिपद ने यह प्रस्ताव आयुर्वेद संकाय के विचाराधीन प्रस्तुत किया और संस्तुति की कि यदि यह स्वीकार्य हो तो भारतीय चिकित्सा केन्द्रीय परिपद, नई दिल्ली द्वारा निर्धारित डिप्लोमा पाठ्यक्रमों को दृष्टिगत रखते हुए डिप्लोमा का परिवर्तित पाठ्यक्रम प्रस्तावित करें ।
- (ई) आयुर्वेद संकाय ने अपनी निश्चय संख्या 11 दिनांक 23 एवं 24 जुलाई, 1979 द्वारा इस प्रस्ताव को मण्डल द्वारा उचित कार्यवाही करने के लिये प्रेषित किया गया था ।

एतदर्थ मण्डल ने इस विषय पर गहन विचार विमर्शोपरान्त निम्न-लिखित संस्तुतियां कीं :—

- (क) यद्यपि उपर्युक्त विन्दु (अ) एवं (स) में संदर्भित आयुर्वेद अध्ययन मण्डल द्वारा प्रस्तावित तथा आयुर्वेद संकाय द्वारा अनुमोदित डिप्लोमा पाठ्यक्रम निसंदेह उपर्युक्त एवं अच्छे स्तर का है परन्तु चूंकि भारतीय चिकित्सा केन्द्रीय परिपद, नई दिल्ली ने पाठ्यक्रमों में राष्ट्रीय स्तर पर समानता लाने की

दृष्टि से पाठ्यक्रमों का निर्माण किया है तथा इस विश्वविद्यालय ने उन्हें स्वीकार कर प्रारम्भ कर दिया। इस आशय को दृष्टिगत रखते हुए आयुर्वेद अध्ययन मण्डल की निश्चय संख्या 8 दिनांक 30 एवं 31 अक्टूबर 78 द्वारा प्रस्तावित व संकाय की निश्चय संख्या 2 (म) दिनांक 21 एवं 22 मार्च, 1974 द्वारा अंग्रेपित पाठ्यक्रम को निरस्त समझा जावे।

(व) भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली द्वारा निर्धारित डिप्लोमा पाठ्यक्रमों को मण्डल ने सिद्धान्ततः स्वीकार करते हुए उसके निर्धारणार्थ तथा उसे पठन-पाठनोपयोगी बनाने हेतु मण्डल की गत बैठक दिनांक 26 एवं 27 मार्च, 1979 की निश्चय संख्या 5(द) (II) द्वारा गठित समिति को अविज्ञित किया।

(स) भारतीय चिकित्सा केन्द्रीय परिषद्, नई दिल्ली को मण्डल की उक्त संस्तुति से अवगत कराते हुए डिप्लोमा पाठ्यक्रमों की 15 प्रतियां शीघ्रातिशीघ्र मगवायी जावें।

6. मण्डल ने सर्वसम्मति से संस्तुति की कि :—

(अ) आयुर्वेद में नित्य उपयोगी वस्तुओं तथा आसान उपलब्ध वस्तुओं, सुलभ व्यायाम, तथा प्राकृतिक साधनों के आसान प्रयोगों द्वारा बहुत सी विभिन्न प्रकार की नित्य प्रति होनी वाली व्याधियों के निदान की अत्यन्त उत्कृष्ट विधियों का भण्डार है जिनके ज्ञान से व्यक्ति स्वयं निरोग रह सकता है तथा छोटी छोटी व्याधियों का निदान स्वयं आत्मविश्वास के साथ अपने निवास पर ही कर सकता है। इस निधि का लाभ आम जनमानस को प्राप्त हो तथा पारिवारिक स्तर पर उचित निदान सुलभ हो सके। इसकी आवश्यकता को दृष्टिगत रखते हुये विश्वविद्यालय द्वारा सम्पादित गृहविज्ञान उपाधि पाठ्यक्रम में आयुर्वेद विषयक ऐसे सुगम प्रश्न पत्रों का निर्धारण किया जाना चाहिये।

(व) मण्डल ने श्री मदन लाल शर्मा, (संयोजक आयुर्वेद अध्ययन मण्डल तथा अधिष्ठाता, आयुर्वेद संकाय) से आग्रह किया कि वे इस परिपेक्ष्य में शीघ्रातिशीघ्र आवश्यक कार्यवाही करें।

7. मण्डल ने श्री रंगनाथ शर्मा, आचार्य रोग विज्ञान, श्री मदन मोहन मालवीय राजकीय आयुर्वेद महाविद्यालय, उदयपुर के सभा में प्रस्तुत निम्नलिखित प्रस्ताव को स्वीकार करने की संस्तुति की।

“आयुर्वेद महाविद्यालयों में विभिन्न विभागों में प्रशिक्षित सुयोग्य घात्री-कल्पद नहीं है, एवं जो हैं वे पर्याप्त प्रशिक्षित नहीं हैं ऐसी स्थिति में यह प्रस्तावित किया जाता है कि घात्री कल्पद के शिक्षण प्रशिक्षणार्थ मैडीसिन संकाय की भांति, जयपुर एवं उदयपुर में एक त्रिवर्षीय पाठ्यक्रम आयुर्वेद संकाय के अधीन प्रारम्भ किया जाए तथा उसकी परीक्षाएँ विश्वविद्यालय द्वारा सम्पादित करायी जावें।

8. मण्डल ने सर्वसम्मति से यह निर्णय लिया कि राज्य सरकार को संस्तुति की जावे की मेडिसिन एण्ड फार्मास्युटिक्स संकाय के शिक्षकों/चिकित्सकों को स्नातकोत्तर अध्ययनार्थ पूरे वेतन पर उपलब्ध सुविधा आयुर्वेद संकाय के शिक्षकों एवं चिकित्सकों को भी प्रदान की जावे इसके अतिरिक्त यह भी एक विसंगति है कि आयुर्वेद संकाय के परीक्षकों, तथा परीक्षा सम्पादनार्थ नियुक्त व्यक्तियों को परीक्षा सम्पादनीय राशि (Examination remuneration) अन्य संकाय जैसे मैडीसिन, संस्तुताध्ययन संकायों के शिक्षकों/परीक्षकों की तुलना में कम मिलता है अतः यह राशि उनके समान निर्धारित की जानी चाहिये।

9. मण्डल ने श्री हरीश कौशिक, सचिव, राजस्थान अधीनस्थ कर्मचारी संघ आयुर्वेद शाखा, उदयपुर के विश्वविद्यालय की प्रायोगिक परीक्षाओं के (रेम्यूनरेशन चार्ज) पारिश्रमिक भत्ता दिलवाने के विषयान्तर्गत पथ (परिशिष्ट IV) पर विचार विमर्श किया।

मण्डल ने इस परीपेक्ष्य में राजस्थान विश्वविद्यालय आदेश क्रमांक (Exam. II/Sc./26775-977/ दिनांक 7 अप्रैल, 1979 (परिशिष्ट V) का प्रतिवेदन किया एवं संस्तुति की कि आयुर्वेद महाविद्यालयों में होने वाली आयुर्वेद परीक्षाओं में प्रयोगशाला सहायकों को (परिशिष्ट VI) संलग्न सूची के अनुसार पारिश्रमिक भत्ता शीघ्र दिलाया जावे।

10 मण्डल ने श्री मदन लाल शर्मा, आचार्य, स्नातकोत्तर रस शास्त्र एवं भेषज्य कल्पना विभागाध्यक्ष, मदन मोहन मालवीय राजकीय आयुर्वेद संस्थान, उदयपुर के आयुर्वेद संकाय के अधिष्ठाता के पद पर नियुक्त होने पर हादिक सहर्ष शुभकामनाएँ प्रदर्शित की तथा आशा की कि उनके करकर्मों से आयुर्वेद संकाय अवश्यमेव प्रगति की ओर अग्रसर होगा।

11. सदस्यों द्वारा संयोजक महोदय तथा कार्यालय की ओर से उपस्थित श्री रवीन्द्र भारती के मण्डल की बैठक के कुशल सम्पादन के फलस्वरूप धन्यवाद के मत के साथ बैठक विसर्जित हुई।

हस्ताक्षर  
बैद्य मदन लाल शर्मा,  
(संयोजक)  
आयुर्वेद अध्ययन मण्डल

## परिशिष्ट I

(स्पष्टीकरण टिप्पणी)

(संदर्भ मण्डल की निश्चय संख्या 2)

आयुर्वेद संकाय द्वारा अपनी निश्चय संख्या 5 (व) दिनांक 24 अक्टूबर, 1977 द्वारा वैद्य श्री शंकरलाल त्रिवेदी, प्राचार्य, परशुरामपुरिया आयुर्वेद महाविद्यालय, सीकर के आयुर्वेद संकायान्तर्गत निहित प्रत्येक विषय की एक-एक समिति का निर्माण करने के प्रस्ताव पर विचार किया गया।

अकादमी परिषद ने अपनी निश्चय संख्या 15 (III) दिनांक 8 अप्रैल 1978 द्वारा इस वृत्त पर विचार विमर्श हेतु तीन सदस्यीय समिति का गठन किया।

समिति ने अपनी बैठक दिनांक 21 अगस्त, 1978 द्वारा 12 विषयों में आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों के निर्माण की संस्तुति की।

अकादमी परिषद ने अपनी निश्चय संख्या 6 (वी) दिनांक 11 मार्च 1979 द्वारा उक्त समिति की संस्तुतियों को स्वीकार करने की संस्तुति की और फलस्वरूप एक नये निम्नलिखित परिनियम 42-एफ के प्रावधानों का सृजन किया। सिण्डीकेट ने अपनी निश्चय संख्या 3 दिनांक 23 मार्च 1979 द्वारा इस प्रावधान को अनुमोदित किया तदर्थ कुलाधिपति महोदय ने दिनांक 31-7-79 को इस प्रावधान पर अपनी सहमति प्रदान की :—

## S.42-F

1. There shall be an Ayurvedic Education and Research Committee in each of the following subjects or groups of subjects :
  - ( i ) Samhita Science, Sanskrit, Siddhanta and History.
  - ( ii ) Sharirarachana Vigyan.
  - ( iii ) Sharirakriya Vigyan.
  - ( iv ) Dravyaguna Vigyan.
  - ( v ) Rasashastra Bheshajya Kalpana.
  - ( vi ) Rogavigyan and Vikrativigyan.
  - (vii) Swasthavritta.
  - (viii) Agadatantra and Vyavharayurveda.
  - (ix) Prasuti tantra, Stree Bal Roga.
  - ( x ) Kaya Chikitsa.
  - (xi) Shalyatantra.
  - (xii) Shalakya Tantra.

2. The Numbers of members of each Committee shall not exceed 5 including atleast one external member connected with research in the field of Medicine or Ayurvedic drugs.
3. The Committees shall be constituted by the Board of studies in Ayurveda for a period of three years from amongst the heads of the under-graduate and Post-graduate departments of the affiliated Ayurvedic College in rotation. As far as possible the various sub-specialities and under-graduate and post-graduate Ayurvedic College shall be fairly represented.
4. Each Ayurvedic Education and Research Committee shall have a Convener appointed by itself in the following order of preference from amongst its members :—
  - (i) Member of the Board of Studies in Ayurveda.
  - (ii) Principal of a Post-graduate College being Head of the P.G. Department.
  - (iii) Head of the Post-graduate Department.
5. The functions of the Ayurvedic Education and Research Committees shall be :—
  - (a) To recommend to the Board of Studies in Ayurved, the courses of study, curricula and scheme of examinations, *qualifications of teachers and Examiners of under-graduate and Post-graduate* degrees and diploma in the subject and its allied specialities.
  - (b) To approve the subject of thesis/disertation etc. for the Post-graduate examinations of the Faculty.
  - (c) To advise of all matters referred to the committee by the Syndicate or the Academic Council or the Faculty of Ayurveda or the Board of studies.
  - (d) The Ayurvedic Education and Research Committee may bring to the notice of the Board of studies matters connected with the courses and examinations in their respective subjects or specialities.

## परिशिष्ट II

संदर्भ मण्डल की निश्चय संख्या (4)

सं० जेड 28015/16/78/पी०पी० (एच)

भारत सरकार

स्वास्थ्य एवं परिवार कल्याण मंत्रालय

निर्माण भवन

नई दिल्ली-110011

1 दिसम्बर, 1978.

राजेश्वर प्रसाद

सचिव

विषय : — राष्ट्रीय चिकित्सा शिक्षा नीति :

महोदय,

मुझे इस पत्र के साथ राष्ट्रीय चिकित्सा शिक्षा नीति पर एक पत्रांक संलग्न करने का निर्देश हुआ है, जिस पर नई दिल्ली में 6 से 8 अक्टूबर, 1978 तक आयोजित किए गए केन्द्रीय स्वास्थ्य परिषद तथा केन्द्रीय परिवार कल्याण परिषद के पांचवें सम्मेलन में विचार विमर्श किया गया था।

विचार विमर्श करने के पश्चात सम्मेलन ने निम्नलिखित प्रस्ताव पारित किया :—

'इस संयुक्त सम्मेलन ने परिपत्रित राष्ट्रीय चिकित्सा शिक्षा नीति के मसौदे में दिलचस्पी ली। यह सम्मेलन सिफारिश करता है कि इसे व्यावसायिक संघों, विशेषज्ञ संस्थाओं, विश्वविद्यालयों, प्रसिद्ध शिक्षा-शास्त्रियों आदि में परिपत्रित किया जाय और उनके विचार प्राप्त करने के पश्चात इसे अपनाने के लिए इस पर आगे कार्य शुरू किया जाय।'

मेरा आपसे अनुरोध है कि आप इस पत्रक पर विचार करें तथा अपने विचार इस मंत्रालय को 31 दिसम्बर, 1978 तक भेजने की कृपा करें ताकि इस मामले में आगे कार्यवाही शुरू की जा सकें।

श्री वेदपाल त्यागी

उप-कुलपति,

राजस्थान विश्वविद्यालय, जयपुर (राज०)

भवदीय,

ह०

राजेश्वर प्रसाद

## NATIONAL MEDICAL EDUCATION POLICY

## Preamble

1. India has an old tradition dating back to several centuries in the theory practice of medicine. The earliest known systems of Ayurveda, Yoga and Siddha were propagated under the Gurukul system and with a decline in this method of imparting education, the emphasis on these of medicine and their development has also declined. The Unani system of medicine came to India with the Greeks and enjoyed great patronage during the Moghul regime. Later, the Homeopathic system came into great prominence and because of its ease of utilisation, spread very widely.

2. The modern system of medicine was introduced in this country by the British in the last century. Its rapid development took place after 1930, more particularly after, Independence.

## Objectives

3. Education in the field of medicine has two fundamental objectives; first is the development of the basic knowledge and the other is the development of medical and allied manpower to provide the services. Earlier attempts to develop an integrated system of medicine were not successful—Further, because of the fact that in the medical field both the public and the private sector have been jointly operating, there has been inadequate manpower planning.

4. In the field of medical education, there has been a cultural dichotomy, coupled with paralysed development of the various systems of medicines—The other medical system has, to a large extent, kept pace with the development in the rest of the world. However, the type of education imparted, particularly at the under-graduate level, is heavily hospital oriented and has very little relevance to actual Indian situations. This makes a fresh graduate unsuitable to handle situations in the community and unable to appreciate the problems of medicine like Ayurveda, Unani, Siddha, Yoga Naturopathy and Homeopathy, have, after years of comparative neglect, started coming into their own. While there need be no attempt to forcibly integrate the modern medicine with the traditional systems of medicine, it is essential from the point of view of optimal utilisation of national resources that each system should realise in the Indian conditions the limits as well as potentials of the other systems and draw inspiration from them. All the systems should support each other mutually. This can be done only by a concern for other systems and understanding of their functioning.

5. The National Medical Education Policy should seek to achieve the following :—



1. Quantitative and qualitative development of adequate trained health personnel of all categories;
2. development of programmes of training for different categories of health personnel;
3. development of agencies for implementation of the educational programmes;
4. Organisation of an appropriate structure in order to bring about necessary modification in education on depending upon the changing national needs;
5. development and a proper and adequate evaluation system for health programmes.

#### Health Manpower Development :

6. There has to be a balanced development of graduates and specialists of medicine (of all systems) as also of the other health personnel like dentists, nurses, technicians, health work, health supervisors, etc. There is at present a great tendency among medical graduates to go in for postgraduation in particular branches of medicine. An assessment of the requirements of specialists will first need to be made whereafter the organisation of post-graduate education will have to be geared towards achieving this objective. There is also a need to restructure the educational pattern. It is recognised by every body that the present system of education, particularly in the modern medicine is not relevant to the conditions prevailing in the country. While on the one hand there is an essential need to keep pace with the developments elsewhere in the world, there is an equal if not more, important need to make them medical education process serves the needs of the country and its population. Secondly, systems of medicine must draw strength and inspiration from each other. The ideological differences among different systems of medicine need to be bridged. This can be done only by the leaders in the profession, sitting together and evolving methods to learn from each other. To help in such innovative processes and to provide for organised development of all medical educational processes, it would be necessary to set up a Medical and Health Education Commission embracing all systems of medicine and all types of medical and para-medical personnel. It should be noted here that the quantitative norms such as doctor—patient ratio, doctor—population ratio, nurse—doctor ratio, etc. are not the real indicators of the health status of a country. The Medical and Health Education Commission can, over a period of time, utilise the available knowledge from the ancient and modern systems of medicine in an effort to develop an Indian system of medicine, thus obliterating the caste system prevailing in the field of medicine.

#### Health Service Coverage

7. Most Medical and health personnel are concentrated in the

areas. Their distribution does not necessarily correspond to the distribution of population in the country. This therefore, implies that the services are not available uniformly. While urbanisation is a factor which has to be contended with, it is equally necessary to initiate efforts to spatially distribute medical and health personnel so as to be able to provide suitable health coverage—This would apply not only to doctors but also to all other medical and para—medical personnel. To achieve this, some form of obligatory rural service, either as part of educational process or immediately following there—after, needs to be introduced in the modern system of medicine, of the overlap between internship and house—surgeoncy as also an automatic movement in to postgraduation can, to a large extent, be rectified.

### Continuing Education

8. The medical education system in India is characterised a lack of continuing education. There is, therefore, updating of knowledge and of skills, Health professionals in outlying areas have no means of keeping themselves abreast of development. To some extent, this has contributed to a greater concentration in the Urban areas. Further, with the Indian penchant for acquisition of degrees, training ipso facto providing knowledge and skills with out a certificate or degree is not easily accepted. It should be our endeavour to ensure that every health professional is brought back into the system of education and imparted suitable training once every 5 or 7 years. This should apply not only to those who are in Government but even to those who are outside it—This can take the form of indorsement in their basic qualification. With such a system, incentives can be built in for those working in the rural areas.

9. To sum up, the following are the essential aspects of a “National Medical Education Policy.”

- (1) A realisation and understanding of the potential of all systems of medicine.
- (2) A realistic assessment of the health manpower requirement;
- (3) Constitution of a Health and Medical Education Commission embracing all systems of medicine and all types of medical and para-medical personnel.
- (4) Re-orientation of medical education system to be in tune with the needs and aspirations of the Indian Community.
- (5) Spatial distribution of health manpower by incorporating if necessary obligatory national service.
- (6) Provision of continuing education, particularly for imparting knowledge and skills, to all categories of health personnel;

- (7) Utilisation of available knowledge from both ancient and modern system of medicine in an effort, over a period of time, to develop an Indian system of medicine thus obliterating the caste system prevailing in the field of medicine.

## परिशिष्ट III

(संदर्भ मण्डल की निश्चय संख्या 5)

श्रीमान् उपकुलपति (समिति)

राजस्थान विश्वविद्यालय,

जयपुर ।

विषय : - आयुर्वेद में एक वर्षीय डिप्लोमा ( स्नातकोत्तर ) प्रारम्भ  
करवाने के सम्बन्ध में ।

दिनांक : 20-9-78

महोदय,

उपरोक्त विषयान्तर्गत निवेदन है कि मेडीकल कालेज में जिस प्रकार एक वर्षीय स्नातकोत्तर डिप्लोमा कोर्स चल रहा है ऐसा ही पाठ्यक्रम आयुर्वेद संकाय में खुलना चाहिये । इस विषय पर आयुर्वेद संकाय की विश्वविद्यालय में हुई मीटिंग का सम्पूर्ण विवरण 30—31 अक्टूबर, 1973 की बैठक में तैयार हो चुका है तथा इसे संकाय की 21/22 मार्च 1974 की मीटिंग में भी पूर्ण रूप से तैयार किया जा चुका है । अब सिर्फ इसे एकेडेमिक कौन्सिल की मीटिंग में रखा जाना है तथा वहां से सीनेट की मीटिंग में ।

वैसे यह मांग सीनेट की आगामी मीटिंग में उठ रही है । इससे पूर्व मैं चाहता हूं कि इस पूर्व-निर्धारित पाठ्यक्रम को 1 अक्टूबर, 78 को होने वाली एकेडेमिक कौन्सिल की मीटिंग में रख दिया जावे ।

भवदीय

ह०/-

नन्द किशोर शर्मा

(सीनेट सदस्य)

## परिशिष्ट IV

संदर्भ मण्डल की संस्तुति संख्या (9)

सेवा में,

श्रीमान् अधिष्ठाता,  
 आयुर्वेद संकाय  
 राजस्थान विश्वविद्यालय, जयपुर  
 केम्प—उदयपुर

विषय :—विश्वविद्यालय की प्रायोगिक परीक्षाओं के (Remuneration Charges) पारिश्रमिक भत्ता दिलवाने के सम्बन्ध में।

संदर्भ :—राजस्थान विश्वविद्यालय के आदेश क्रमांक—Exam. II' Sc/26775-997 दिनांक 7 अप्रैल, 1979 (प्रतिलिपि संलग्न)

महोदय

उपरोक्त विषयान्तर्गत निवेदन है कि राजस्थान विश्वविद्यालय, जयपुर ने अपने अधीनस्थ एवं सम्बद्ध महाविद्यालय के प्रयोगशाला कर्मचारियों को विश्वविद्यालय द्वारा निर्धारित प्रायोगिक परीक्षा सम्पन्न कराने हेतु पारिश्रमिक भत्ता उक्त आदेश द्वारा वर्ष 1978 से प्रदान करने का प्रावधान किया है। परन्तु राजस्थान विश्वविद्यालय द्वारा प्रकाशित सूची में आयुर्वेद संकाय का कहीं भी वर्णन नहीं है जबकि राजस्थान विश्वविद्यालय से सम्बद्ध आयुर्वेद महाविद्यालय में भी राजस्थान विश्वविद्यालय द्वारा निर्धारित प्रायोगिक परीक्षाएँ विभिन्न विभागों में सम्पन्न करवाई जाती हैं।

अतः श्रीमान् से निवेदन है कि राजस्थान विश्वविद्यालय के अधीनस्थ महाविद्यालयों एवं सम्बद्ध महाविद्यालयों के प्रयोगशाला कर्मचारियों को राजस्थान विश्वविद्यालय द्वारा निर्धारित प्रायोगिक परीक्षाओं में स्वीकृत किये गये पारिश्रमिक भत्ता आयुर्वेद महाविद्यालय के प्रयोगशाला कर्मचारियों को भी वर्ष 1978 से राजस्थान विश्वविद्यालय द्वारा निर्धारित प्रायोगिक परीक्षाओं के सम्पन्न करवाने का भत्ता दिलवाने का राजस्थान विश्वविद्यालय संलग्न सूची अनुसार पारिश्रमिक भुगतान करवाने का कष्ट कर अनुगृहीत करावें।

संलग्न :—1. विश्वविद्यालय के आदेश की प्रति

2. पारिश्रमिक भत्ते की दर

भवदीय,

ह०/- (हरीश कौशिक)

सचिव, राजस्थान अधीनस्थ कर्मचारी संघ  
 आयुर्वेद शाखा, उदयपुर।

## परिशिष्ट V

(संदर्भ मण्डल की संस्तुति संख्या 9)

To,

1. All the Principals of the affiliated/constituent colleges of the University.

2. All Heads of the University Teaching Deptts.

No. Exam. II/Sc./26775-977

Dated—7th April, 1979

*Sub* :—Payment of remuneration to the laboratory Assistants for their assistance in conducting the University Practical examinations.

Dear, Sir/Madan,

In continuation of this office Circular letter No. Exam. II/Sc./78/20105-269 dated 9th May, 1978, on the above subject, I am directed to inform you that the Vice-Chancellor has been pleased to approve the following fees for Payment of remuneration to the laboratory staff for their assistance in conducting the University Practical examinations with effect from the University examination of 1978 :—

## 1. Chemistry :

- |  |   |
|--|---|
| (a) Pre-Univ., I yr. T.D.C.<br>Sc. and B.Sc. Hons. Pt. I             | —Rs. 1.20 Per candidate for the first batch.<br>—Rs. 0.70 Per candidate for all subsequent batches. |
| (b) I yr. & III yr. T.D.C.<br>Sc. and B.Sc. Hons.<br>Parts II & III. | —Rs. 1.80 Per candidate for the first Batch.<br>—Rs. 0.70 Per candidate for all subsequent batches. |
| (c) M.Sc.  | —Rs. 3.00 Per candidate.  |

## 2. Physic &amp; Geology :

- |   |  |
|---|--|
| (a) Pre-Univ., I Yr. T.D.C.<br>Sc. and B.Sc. Hons.<br>Part I.         | —Rs. 1/- Per candidate for the first Batch.<br>—Rs. 0.70 Per candidate for all subsequent batches. |
| (b) II Yr. & III Yr. T.D.C.<br>Sc. and B.Sc. Hons.<br>parts II & III. | —Rs. 1/- Per candidate.  |
| (c) M.Sc.   | —Rs. 2/- Per candidate with a minimum of Rs. 10/-.   |

## 3. Botany, Zoology &amp; Agriculture :

- (a) Pre-Univ./Professional —Rs. 0.35 Per candidate  
(Ag.), IYr.T.D.C.Sc./B.Sc.  
Hons. Pt. I and B.Sc.  
Ag.) Pt. I
- (b) IYr. & IIYr, T.D.C. —Rs. 0.60 Per candidate  
Sc. B.Sc. Hons. Parts.  
II and III and B.Sc. (Ag.)  
Parts II and III
- (c) M.Sc. —Rs. 0.60. Per candidate with  
a minimum of Rs. 10/-

## 4. Geography :

- (a) Pre-Univ., IYr., T.D.C. —Rs. 0.90 Per candidate.  
B.A./B.Sc. Hons. pt. I
- (b) IYr. and IIYr. T.D.C. —Rs. 1.20 Per candidate  
and B.A./B.Sc. Hons.  
Parts II & III
- (c) M.A./M.Sc. —Rs. 2/- Per candidate with  
a minimum of Rs. 10/-

## 5. M.A./M.Sc. Statistics

—Rs. 2.00 Per candidate with  
a minimum Rs. 10.

## 6. Medical faculty :

- (a) Surgery —Rs. 1.00 Per candidate.
- (b) Pathlogy —Rs. 0.60 Per candidate.
- (c) Physiology —Rs. 1.50 Per candidate.
- (d) All other Subjects —Rs. 0.50 Per candidate.

## 7. Engineering :

- (a) B.E. I, II and III —Rs. 0.80 per candidate  
Examinations
- (b) B.E. IV and final Exams. —Rs. 2.00 Per candidate with  
minimum of Rs. 10/-

## 8. Home Science :

- (a) Pre-Univ., Iyr. T.D.C. —Rs. 1.20 Per candidate for  
Arts, B.Sc. Home Science  
part I the first batch  
—Rs. 0.70 per candidate for  
subsequent batches
- (b) II Yr. and III yr. T.D.C. —Rs. 1.80 per candidate for  
Arts, B.Sc. Home Science  
Part II & III the first batch.  
—Rs. 0.70 per candidate  
for subsequent batches.

9. Psychology :

- (a) IYr., IYr. and Final Yr. —Re. 0.35 per candidate  
for Arts. and B.A. Hons.  
Parts I, II and III —Re. 0.35 per candidate.  
M.A. —Re. 0.50 per candidate

10. Music/Dancing :

- (a) Pre-Univ. Iyr. II yr. and —Rs. 0.35 per candidate  
and final yr. T.D.C. Arts  
and B.A. Hons. Parts I, II  
& III  
(b) M.A. =Rs. 0.60 per candidate.  
(c) Tabla player =Rs. 6.00 per session.

11. Drawing & Painting :

- Pre. Univ. I yr., IYr. and =Rs. 0.35 per candidate.  
final yr. T.D.C. Arts and  
B.A. Hons. Parts. I,II,III.

12. Type Writting :

- All Examinations =Rs. 6.00 per day

13. Literary Science

=Rs. 5.00 per session

14. B.Ed.

=Rs. 5.00 per session.

*N.B.* :—(i) "Subsequent batch" will mean any batch of candidates after the first one exam. by the same set of examiners or by another set of Examiners.

(ii) The remuneration worked out as above will be distributed by Head of Institution concerned among all the persons engaged for practical Examinations.

The laboratry staff may please be informed accordingly and the remuneration bills be forwarded to the finance officer, University of Rajasthan, Jaipur. in the enclosed proforma.

Yours Truly

Sd/-

Controller of Examination

Dated : 7th April 1979.

*Encl : one*

No. Exam. II/Sc./26978-7019

Copy forwarded for information to :

1. The Finance officer/All Dy. Registrar/Asstt. Registrar/Section Officers.
2. P.S. to Vice-Chancellor.
3. P.A. to Registrar.
4. Director College Education, Jaipur.

Sd/-

Controller of Examination



## परिशिष्ट 'VI'

(संदर्भ मण्डल की निश्चय संख्या 9)

आयुर्वेद महाविद्यालयीय, प्रयोगशाला में प्रायोगिक परीक्षा हेतु कर्मचारियों को देय प्रस्तावित दरों की सूची —

- |  |   |
|--|---|
| 1. प्री-आयुर्वेद-रक्त रसायनशास्त्र   | 1.20 प्रत्येक छात्र पर प्रथम बैच के लिए 0.70 वचे हुए सभी बैच के छात्रों के लिए  |
| भौतिक एवं पदार्थ विज्ञान   | 1.20 प्रत्येक छात्र पर प्रथम बैच के लिए 0.70 वचे हुए सभी बैच के छात्रों के लिए  |
| उदभिज्जांग प्रत्यांग विज्ञान   | 1.20 प्रत्येक छात्र पर प्रथम बैच के लिए 0.70 वचे हुए सभी बैच के छात्रों के लिए  |
| 2. द्वितीय वर्ष—क्रिया शरीर रचना शरीर स्वास्थ्यवृत्त (न्यूनतम रु० 10/-)  | 1.80 प्रत्येक छात्र पर<br>1.80 प्रत्येक छात्र पर<br>1.80 प्रत्येक छात्र पर<br>( 0.70 वचे हुए सभी बैच के छात्रों हेतु )                                    |
| 3. तृतीय वर्ष—विकृति विज्ञान अगदतंत्र एवं व्यवहार आयुर्वेद द्रव्यगुण विज्ञान रसशास्त्र एवं भेषज्य कल्पना विभाग (न्यूनतम 10/- रु० ) | 1.80 प्रत्येक छात्र पर<br>1.80 प्रत्येक छात्र पर<br><br>1.80 प्रत्येक छात्र पर<br>1.80 प्रत्येक छात्र पर<br><br>(0.70 वचे हुए सभी बैच के छात्रों के लिए । |
| 4. चतुर्थ—कौमारमृत्य स्त्रीरोग-प्रभूति विज्ञान (न्यूनतम 10/- रु०)  | 2.00 प्रत्येक छात्र पर<br>2.00 प्रत्येक छात्र पर  |

- |    |                            |                        |
|----|----------------------------|------------------------|
| 5. | पंचम वर्ष—काय-चिकित्सा     | 2.00 प्रत्येक छात्र पर |
|    | शल्यतंत्र                  | 2.00 प्रत्येक छात्र पर |
|    | शालाक्यतंत्र               | 2.00 प्रत्येक छात्र पर |
|    | (न्यूनतम रु० 10/-)         |                        |
| 6. | स्नातकोत्तर—सभी विषयों में | 3.00 प्रत्येक छात्र पर |
|    |                            | (न्यूनतम रु० 10/-)     |
-

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN MATHEMATICS HELD ON THE 11TH SEPTEMBER,  
1979 AT 12:00 NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT (NEW BUILDING), UNIVERSITY  
CAMPUS, JAIPUR.

Present :

1. Shri S.S. Sodhi (Convener)
2. Dr. D.C. Gokhroo
3. Dr. Karan Singh
4. Shri D.S. Bhatia
5. Dr. R.S. Kushwaha.

1. Under Section 24-E (8) of the University Act, the Board *appointed* Shri S.S. Sodhi, Principal Govt. College, Sriganganagar as Convener of the Board of Studies for the residue of the term of Dr. P.D. Verma ending on the 2nd May, 1981.

2. Under Section 34(4) (iv) of the University Act, the Board *elected* Dr. D.C. Gokhroo, Lecturer in Mathematics, Govt. College, Ajmer as member other than the Convener of the Board of Studies to serve on the Committee for selection of examiners in the Subject for the year.

3. The Board scrutinized the statement of qualifications and teaching experience etc. of teachers, received from the University Teaching Deptts., Univ. Colleges, affiliated institutions and other University and revised the panel of examiners in terms of S (25) (2) (a).

4. The Board offered no comments on the reports of examiners and question papers set for the examination of 1979.

5. The Board recommended that the same courses of study and text books in the subject as contained in 1979 ed. of the syllabuses be repeated for the examinations mentioned below :—

1. Pre-University (Sc.), 1982.

## II. Degree Examinations :

- (a) I Yr. T.D.C. (Pass) Course 1982
- (b) II Yr. T.D.C. (Pass) Course 1982
- (c) III. Yr. T.D.C. (Pass) Course 1982

## III. Honours Examinations :

- (a) Part I Exam. of 1982
- (b) Part II Exam. of 1982
- (c) Part III Exam. of 1982

## IV. Post Graduate Examinations :

- (a) Prev. Annual Exam., 1982
- (b) Final (Annual) Exam., 1983

## V. M.Phil Exam. 1982.

6. With reference to Ac. Council Res. No. 4A (ii) dated the 15/16th May, 1979, *the Board resolved to recommend* that the University may get the syllabi of the various exams. in the subject translated from English into Hindi at its own level.

7. With reference to Academic Council Resolution No. 10 dated the 1st June, 1979, and the Syndicate Res. No. 3 dated 16th June, 1979 the Board considered whether consequent upon abolition of Unit system under the aforesaid resolution, any re-arrangement of the courses of study already prescribed and approved by the competent University bodies is called for. If so, to do the needful for the syllabus of 1979 edition applicable to 1981 examination.

*The Board made additions/alterations in the Manuscript of the 1979 Ed. of the syllabus for the under-graduate and degree examinations of 1981.*

8. With reference to the Academic Council Res. No. 11 dated 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979 the Board considered whether consequent upon the abolition of Semester Scheme of Examination, any minor re-adjustment of courses of study required if any, for the Annual Scheme of Examinations of 1981 on the basis of the courses prescribed for the Semester Exams. is called for, If so, to do the needful in the Manuscript of 1979 edition of the Syllabus applicable for the Prev. Exam. of 1981 and Final Exam. of 1982.

In the courses of study except those already made by it vide its Res. 7. (consequent upon abolition of Unit System in the Manuscript of the 1979 Edition of the Syllabus.

9. It was reported to the Board that the Academic Council vide its Res. No. 14, dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated the 24th Dec., 1979 to that effect that the students of M.A./M.Com. of the Institute be allowed to offer Viva-Voce at the M.A./M.Com. Final Examination and resolved that :—

- (i) The facility of offering viva-voce be permitted to the students of Correspondence Studies for the examination of 1979, be also extended the M.A./M.Com. Exam. of 1980.
- (ii) In respect of the matter of allowing candidates to appear in viva-voce; the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par, an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper wherever necessary, be referred to the Board of Studies under the purview of the faculties, where the viva-voce is permissible.

*The Board noted the above recommendation in view of the fact that the paper to be offered by the candidates in lieu of viva-voce already exists in the Syllabus.*

10. It was reported to the Board that the Council vide its Res. No. 10 (i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., 1978 regarding introduction of viva-voce in Dissertation for the M.A. Hindi Examination; and resolved as follows :—

- (i) The matter regarding introduction of viva-voce in Dissertation for M.A. Hindi Examination be referred

for consideration to the Board of Studies in Hindi with the observation of the Council that it may consider abolition of the provision of dissertation at the M.A. Hindi Examination and if so. It may consider incorporation of an alternative paper in its place, if necessary.

- (ii) A similar reference be also made to the Boards of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the feasibility of abolition by the provision of dissertation and providing alternative paper in its place, if necessary.

*The Board considered the matter in light of the aforesaid resolution made by the Council and resolved to recommend that (i) the Dissertation for M.A. Examination be continued in lieu of a paper and (ii) the same be examined by the examiner and (iii) there should not be any viva-voce examination on the Dissertation.*

11. The Board *confirmed* the orders dated the 3rd Aug., 1979 of the Vice-Chancellor in accepting the recommendation made by the Convener, B.O.S. in Mathematics to the effect that a provision of viva-voce be made at the M.A./M.Sc. Annual Scheme examination in the subject of Mathematics and consequently the words "or Viva-Voce 100 marks" be added after paper V for the M.A./M.Sc. examination at page 24 of the 1978 edition of the Syllabus.

The meeting ended with a vote of thanks to the Chair.

Sd/- S.S. Sodhi  
Convener.

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MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN ZOOLOGY HELD ON THE 20TH SEPTEMBER, 1979  
AT 12.00 NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT (NEW BUILDING) UNIVERSITY  
CAMPUS, JAIPUR.

Present :

1. Prof. A.S. Kapoor (Convener)
2. Shri K.S. Dhillon
3. Shri A.K. Bose
4. Shri J.M. Srivastava

1. Under section 34(4) (iv) of the University Act, Shri A.K. Bose, Lecturer in Zoology, G.V. College of Science and Agriculture, Sangaria was elected as a member, other than the Convener, to serve on the Committee for selection of examinaers for the year 1979-80.

2. The Board scrutinized the statements of qualifications and teaching experience etc. of teachers, received from the University teaching departments, University colleges, affiliated institutions and other Universities and revised the panel of examiners accordingly in terms of S. 25(2)a.

3. The Board perused the question papers set and reports of examiners for the examinations of 1979 and made no comments thereon.

4. The Board recommended that the existing courses of study and text books in the subject for the various examinations as contained in 1979 edition of the syllabus be repeated for the examinations mentioned below :—

I. (a) Pre-University Examinations of 1982.

II. Degree Examinations :

(a) First Yr. T.D.C. (Pass) Course, Examination of 1982.

(b) Second Yr. T.D.C. (Pass) Course, Examination of 1982.

(c) Third Yr. T.D.C. (Pass) Course, Examination of 1982.

III. *Honours Examinations :*

- (a) Part I Examination of 1982.
- (b) Part II Examination of 1982.
- (c) Part III Examination of 1982.

IV. *Post-Graduate Examinations :*

- (a) Previous Examination of 1982.
- (b) Final (Annual) Examination of 1983.

## V. M.Phil Examination, 1982.

5. With reference to the Academic Council Resolution No. 4A (ii) dated the 15/16th May, 1979, *the Board resolved to recommend* that translation of syllabi in Hindi for the various exams in the subject should be arranged by the University through persons having the necessary competence for the purpose on payment of suitable honoraria.

The meeting ended with a vote of thanks to the Chair.

Sd/- A. S. Kapoor  
( Convener )



MINUTES OF THE MEETING OF THE BOARD OF  
STUDIES IN SOCIOLOGY HELD ON 8.9.1979 AT  
12.00 NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT (NEW BUILDING),  
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri J.P. Sharma (Convener)
2. Shri H.K. Rawat
3. Shri V.P. Sharma
4. Dr. (Mrs) Indu Mathur
5. Shri H.S. Verdia

1. Under Section 34(4) (iv) of the University Act., Shri H.S. Verdia, Senior Lecturer in Sociology, Government College, Banswara was unanimously elected as a member other than the Convener, to serve on the Committee for Selection of Examiners in the subject for the year 1979-80.

2. Since the statements of qualifications and teaching experience of Teachers received from the University Teaching Department, University Colleges and Affiliating Institutions, for inclusion in the revised panel of examiners in terms of section S 25) (2) (a) were not placed before the Board's meeting, the Board could not scrutinise the same.

3. The Board offered following comments after perusal of the examiner's reports (whatever were made available) and the question papers set for the various examinations of 1979 :—

(i) *M.A. IV Semester—Paper VIII, c Advanced Sociological Statistics :—*

The paper was unbalanced and every unit was not covered in the paper. Numericals questions were also absent in the paper.

(ii) *B.A. Final Paper I - Social Survey :*

The Board observed that at least one question of

numerical should be set in this paper and instructions to this effect must be sent to the paper-setter.

The Board further decided to offer comments, if any, on the remaining reports at its next meeting, when these are made available to it by the office.

4. *The Board recommended the following changes in the course of study and text books etc. in the subject for the following examinations :—*

I. Pre-University Examination of 1982—No change

II. Degree Examinations :

(a) First Year T.D.C. (Pass Course)

Examination of 1982.

—No change

(b) Second Year T.D.C. (Pass Course)

Examination of 1982.

—No change

except minor addition/alterations as under :—

In paper—II (c), under the heading “Books recommended” the following additions/alterations be made :—

(i) Add—(Eng & Hindi Editions) after the books at Sl. Nos. 1 and 2.

(ii) Add a new book No. 5 “विषमता और सामाजिक परिवर्तन” :—अ न्द्र वेनेई

(c) *Third Year T.D.C. (Pass Course) Examination of 1982.*

Paper I—No change except as under :—

The following addition/alterations be made in “Books recommended” :

(i) Add—(Eng. & Hindi Editions) after the Book at Sl. No. 3.

(ii) Add—a new book No. 4. “Survey & Research : E.R. Babbie.”

Paper II (a)—(Indian Social Institutions). *No change except as under :—*

The following additions/alterations be made in *Books recommended* :

1. Add—(English & Hindi Editions) after the books at Sl. Nos. 1 and 2

(ii) Paper II (b)—(Sociological Thought)—No change except for the addition of the following books under the heading “Books recommended” :—

2. Development of Social Thought : R. K. Merton.

3. मेक्स वैदर—एक बौद्धिक विवेचन : आर वैन्डिवस

4. Sociological Bulletin.

(iii) Paper—II (c) (Sociology of City)—No change except for the addition of the following books under the heading “Books recommended” :—

5. Urbanisation in India : Bulsara.

6. Urban Sociology : M.S.A. Rao.

7. Sociology of Cities DC Sonza.

### III. Honours Examinations :

(a) Part I Examination of 1982—No change.

(b) Part II Examination of 1982—No change.

(c) Part III Examination of 1982—No change.

### IV. Post-Graduate Examinations :

The Board desired that another meeting of the Board be convened somewhere in the first week of November, 1979 to recommend courses of study for :—

(a) M.A. (Previous) Examination of 1982.

(b) M.A. Final Examination of 1983.

### V. M.Phil. Examination :

*The Board recommended* that the following persons from the University department of Sociology, should be specially invited in the aforesaid meeting in order to finalise the courses of study :

1. Prof. T.K.N. Unnithan.

2. Prof. Ram Ahuja.

3. Dr. N K. Singhi.

4. Dr. (Mrs.) Indu Mathur.

5. With reference to Academic Council Res. No. 4 A(ii) dated the 15/16th May, 1979, the Board assigned the translation work of the syllabus to the following persons :—

(i) Shri V. P. Sharma : Pre University and T.D.C. (I, II and III year), Banasthali.

- (ii) Shri H.K. Rawat, Beawar : M.A. ( Previous )
- (iii) Shri H.S. Verdia : M.A. ( Final )  
Banswara.
- (iv) Dr. (Mrs.) Indu Mathur, : B.A. (Hons.)  
University Deptt of Sociology, Jaipur.

*The Board al o decided that Hindi Syllabus should also be discussed in the next meeting of the Board to be held in November, 1979 before adopting it finally.*

6. With reference to Academic Council Resolution No. 10 dated the 1st June, 1979 and the Syndicate Res. No. 3 dated the 16th June, 1979 the Board *resolved to recommend* that the Units be *deleted* and the arrangement of the courses should remain unchanged.

7. With reference to the Academic Council Resolution No. 11 dated the 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979, Board considered whether consequent upon the abolition of Semester Scheme of Examination any minor re-adjustment of courses of study required if any for the Annual Scheme of Examination of 1981 on the basis of the courses prescribed for the Semester Examinations is called for, if so, be done in the M.S.S. of 1979 edition of the Syllabus applicable for the Prev. Examination of 1981 and final Examination of 1982.

After considering the above resolutions of the Ac. Council and Syndicate the Board made no change in the syllabus applicable for the M.A. (Prev.) Examination of 1981 and Final Examination of 1982.

8. It was reported to the Board that the Ac. Council vide its Res. No. 14 dated the 11th March, 1979 considered proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated the 24th Dec. 1978 to that effect that the Students of M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final examination and resolved that :—

- (i) The Facility of offering Viva-voce be permitted to the students of Correspondence Studies for the examina-

tion of '79, be also extended the M.A./M.Com. Exam. of 1980.

- (ii) In respect of the matter of allowing candidates to appear viva-voce, the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par and an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper, wherever necessary, be referred to the Board of Studies under the purview of the Faculties, where the Viva-voce is permissible.

The Board observed that a Paper to be offered by the students in lieu of viva-voce already exists in the syllabus.

9. It was reported to the Board that the Council vide its Res. No. 10(i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th December, 1978 regarding introduction of viva-voce in Dissertation for the M.A. Hindi Examination, and resolved as follows :

- (i) The matter regarding introduction of viva-voce in Dissertation for M.A. Hindi Examination be referred for consideration to the Board of Studies in Hindi with the observation of the Council that it may consider abolition of the provision of dissertation at the M.A. Hindi Exam. and if so, it may consider incorporation of an alternative paper in its place, if necessary.
- (ii) A similar reference be also made to the Boards of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the Feasibility of abolition by the Provision of dissertation and providing alternative paper in its place, if necessary.

The Board considered the matter in light of the aforesaid resolution of the Council.

*The Board examined the feasibility for offering Dissertation paper and recommended that dissertation paper should not be discontinued.*

10. With reference to the Faculty Resolution No. 4 dated the 28.3.1979 the Board considered the following Resolution received from the Evaluation officer, Association of India Universities, New Delhi regarding introduction of Syllabus for Population Studies at the Under Graduate level :—

“The Population Policy of the Government of India was welcomed. It was noted that the Agricultural Universities had already recommended that population education be made a compulsory subject for their under-graduate course. Resolved that a model Syllabus for population education be prepared and circulated to the Universities of adoption in their Under-graduate curriculum.

Accordingly the Board considered the aforesaid proposal together with the draft Syllabus. The Board observed that the topic of population problem is already being taught at the Under-graduate level and in the form of a full paper at the semester level of examinations. The Board, however, decided to revise the courses in the light of the said syllabus at the appropriate time.

The meeting ended with a vote of thanks to the Chair.

*Convener.*

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MINUTES OF THE JOINT MEETING OF THE BORAD OF  
STUDIES IN BOTANY AND ZOOLOGY HELD ON  
19.9.79 AT 12.00 NOON IN THE V.C'S  
SECRETARIAT, UNIVERSITY CAMPUS,  
JAIPUR.

Present :

1. Dr. H S Narayan
2. Dr. P.N. Mathur
3. Dr M P.S Ghemavat
4. Dr. P.L. Mittal
5. Professor A.S. Kapoor
6. Shri J. M. Srivastava
7. Shri K.S. Dhillon
8. Shri A.K. Bose
9. Prof. B. Tiagi (Chairman)

1. The Board scrutinized the statements of qualifications, teaching experience etc. received from the University Teaching Depts., University Colleges, affiliated institutions and other Universities for inclusion in the revised panel of examiners and prepared panel of examiners in terms of S. 25 (2) (a).

2. The Board discussed the available reports of examiners and question papers set for the examinations of 1979 but did not offer any comments.

3. The Board recommended courses of study and text books in the subject for the following examinations :

(a) Pre-University Examination of 1982 (Appendix—A)

I Yr. Pass & Hons. Pt. I & II

—No change

4. With reference to A.C. Res. No. 4A (ii) dated the 15/16 May, 1979 regarding translating the syllabus into Hindi version, the Board expressed its inability to do so.

5. With reference to Ac.Council Res. No. 10 dated the 1st June, 1979 and the Syndicate Res. No. 3 dated 16th June, 1979, The Board *did* the needful consequent upon the abolition of unit-system in the Syllabus of 1979 edition, as applicable to 981 exam.

The meeting ended with a vote of thanks to the Chair.

Sd/- B. Tiyaqi  
Convener



## APPENDIX—A

## Pre-University Exam. of 1982

## BIOLOGY

There shall be two written papers and practical test as follows :

	Max. Marks	Min. P Marks	Duration
Paper I	51		3 hours
Botany (Theory)	50	33	3 hours
Paper II			
Zoology (Theory)			

*Practical :*

One paper for both  
Botany & Zoology

50	17	4 hours
(25 for Botany & 25 for Zoology).		

Paper I—Botany                      Duration 3 hrs.                      Max. Marks 50

1. Elementary knowledge of the process of photosynthesis. Water relations of plants-absorption, transpiration, and mineral nutrition.
2. Respiration-aerobic and anaerobic respiration. Fermentation and its economic importance, utilization of energy. Growth development and its regulation.
3. A brief description of plants including inflorescence and flower of the following : Pea, *Brassica*, *Solanum*, Hollyhock, and Onion.
4. Structure, reproduction and economic importance of bacteria. Life history of *Spirogyra*, *Rhizopus* and yeast. Basic life history of an angiosperm.
5. Primary anatomical structure of dicot and monocot root, stem & leaf. The cell and cell inclusions (ergastic substances).
6. Interdependence of plants and animals : plants as source of food and as purifiers of air; animals as agents of pollination and seed dispersal.
7. Elementary genetics : Mendel's experiments (Monohybrid cross). Mendel's laws of inheritance.
8. Biology in the service of man and its social implications. population control. New sources of food. Conservation of forests and other natural resources.

*Books recommended :*

- Srivastava, P.N. : Biology, for higher secondary classes. Rajasthan Board of Secondary Education, Ajmer.
- Nathawat, G S., Sharma, P.D. : A Text Book of Botany. Ramesh and Sahani, R K. Book Depot, Jaipur.
- Tiagi, Y.D. : A Text Book of Botany. Universal Book Depot, Agra.
- Singhal, V.P. : Vanaspati Vigyan. Mittal Pub. House, Mathura.

*Practical 25 marks.*

1. Primary structure of root, stem and leaf, Microscopic examination of cells and cell inclusions.
2. Description of plants and plant parts including inflorescence and flower.
3. Experiments on absorption, transpiration, respiration, and photosynthesis.

## Paper II—Zoology

Duration 3 hrs.

Max. Marks 50

1. Characteristics of a living organism : living and nonliving animal and plant life.
2. The animal kingdom : a general account of the diversity of animal life.
3. Nutrition : food, its constituents and their uses; organs associated with food digestion; assimilation of food.
4. Circulation and blood : elementary knowledge of circulation of materials in lower animals; structure and working of human heart differences between arteries and veins; composition of blood; functions of blood cells.
5. Respiration : organs of respiration (skin, gills, trachea and lungs); mechanism of breathing in man; gaseous exchange; transport of  $O_2$  and  $CO_2$ .
6. Excretion : excretory products, excretory organs and process of excretion.
7. Reproduction : asexual reproduction; sexual reproduction (formation of sperm and ovum; fertilization).
8. Growth and aging; effect of hormones on growth; aging as a process; regeneration.

9. Response and coordination : structure of human brain; functions of brain; spinal cord; reflex action; elementary structure and functions of eye, ear, nose, tongue and skin of man. Neuroendocrine system of mammals.
10. Life history and development of frog :
11. Life history and economic importance of housefly, honey bee, silk moth, *Culex*, *Anopheles*, and white ant.
12. Radiation biology : types of radiations; fatal doses; effects of radiations on somatic and germ cells; useful radiations; the future of radiation biology.
13. Organic evolution : evidences of organic evolution; Lamarckism; Darwin's theory of Natural Selection; Neo-Darwinism; elementary ideas about genetic basis of evolution.

**Practical Work :—25 marks**

1. Identification and classification of the animals included in the syllabus, e.g. *Amoeba*, *Sponges*, *Hydra*, *Planaria*, *Freshwater Mussel*, *Cockroach*, *Housefly*, *Mosquito*, *Honey bee*, *Wasp*, *Silkworm* and *Starfish*. Any common fish, *Rana* and *Bufo*. Wall lizard, Snake and Tortoise, common bird and *Lepus*.
2. Frog: Study of the skeletal system, dissection of hyoid apparatus, digestive system, vascular system, urinogenital system and nervous system (spinal and sympathetic nerves only) T.S. of intestine, kidney, ovary, testis, pancreas, spinal cord.

Candidates will be required to submit their laboratory note-books containing a complete record of the laboratory work done duly initialled by the teachers concerned.

**Text Book suggested :**

1. Elementary Course of Practical Zoology : Parker and Bhatia (Macmillan).
2. Biology of the Frog : Holmes (Macmillan).
3. Practical Zoology : Marshall and Hurst (Murray).
4. New Intermediate Zoology : D. Bhatia and P. L. Anand (Atma Ram and Sons, Delhi).
5. Elementary Physiology : Huxley (Macmillan).
6. Indian Zoological memoirs, I. : Bahl, K. N. *Pheretima* (Methodist Publishing House, Lucknow).
7. Text Book of Zoology : Vidyarthi, R.D.
8. A Text Book of Zoology : V.S. Shivpuri.

*Books suggested for general reading :*

1. Johnson's microscopic Objects. How to mount them (Longmans).
  2. Health Vitamins by A. Brown (Longmans).
  3. Food. Health, Vitamins by Primmer (Longmans).
  4. Introductory Biology by Sir Richard Gregory and L.F.J. Brimble (Macmillan and Co., Ltd.)
  5. Introduction to the study of Evolution and Genetics by Shanti Sarup (The Student's Book Co., Jaipur and Jodhpur).
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MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN BOTANY HELD ON 20TH SEPTEMBER, 1979 AT 12.00  
NOON IN THE VICE-CHANCELLOR'S SECRETARIAT,  
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Professor, B. Tiagi, (*Convener*)
  2. Dr. H.S. Narayana
  3. Dr. P.N. Mathur
  4. Dr. M.S. Ghemavat
  5. Dr. P.L. Mittal
- Professor, D. Singh (*Special invitee*)

(1) Under Section 34(4) (iv) of the Univ. Act, the Board elected Dr. P.L. Mittal, Govt. College, Ajmer, as a member to serve on the committee for selection of Examiners in Botany for the year.

(2) The Board scrutinized the panel of external and internal examiners. Some names were included and others deleted and a revised panel of examiners was prepared in terms of S( 5) (2) (a).

(3) The Board scrutinized the reports of examiners and question papers set for the exam. of 1979 and suggested that the consolidated reports from the Head Examiners be obtained in time for presenting them in the meeting of the Board.

(4) The Board recommended courses of study and text-books in Botany for the following examinations :

(I) *Degree Examination :*

- (a) First Year T.D.C (Pass) Course Exam. of 1982, Appendix—'A'.
- (b) Second Year T.D.C. (Pass) Course Exam. of 1982, No change.
- (c) Third Year T.D.C. (Pass) Course Exam. of 1982, No change.

(II) *Honours Examination :*

- (a) Part-I Examination of 1982—Appendix—'B'.

(b) Part-II Examination of 1982—No change.

(c) Part-III Examination of 1982—No Change.

(III) *Post-graduate Examination :*

(a) Previous Exam. of 1982—No change.

(b) Final (Annual) Exam. of 1983—No change.

(IV) M.Phil. Exam. of 1982—No change.

(5) With reference to the Ac.C. Resolution No 4-A (ii) dated 15/16 May, 1979 regarding translation of the syllabus into Hindi version, the Board expressed its inability to do so.

(6) With reference to Ac.C. Res. No. 10, dated the 1st June, 1979 and the Syndicate Res. No. 3, dated 16th June, 1979 the Board did the needful consequent upon the abolition of the unit-system in the syllabus of 1979 edition, as applied to 1981 exams.

(7) With reference to the Ac.C. Res. No. 11, dated the 1st June, 1979 and the Syndicate Res. No. 2, dated the 16th June, 1979, The Board made re-adjustments in the courses of study consequent upon the abolition of Semester Scheme of Examination in the Syllabus of 1979 edition for the (previous) Exam. of 1981 and (Final) Exam. of 1982.

(8) *The Board also resolved with the permission of the Chair that IIIrd Semester Exam. of 1979 and the IVth Semester Exam. of 1980, be held together at the end of the sessions 1979-80.*

(9) The Board with the permission of the chair *resolved to adopt a 12 paper scheme for the M.Sc. Examination in Botany* However, there will be no change in the total marks allotted to the subject at present and also in the proportion of marks between the theory and the practical exams. The teaching periods allotted to the M.Sc. class will also remain as at present.

The meeting ended with a vote of thanks to the Chair.

(B. Tiagi)  
Convener.

(Ref. Res. No. 4 (I)(a))

## APPENDIX—'A'

## 9. BIOLOGY

B.Sc. Ist year.

(For Combination of Physics, Chemistry &amp; Biology)

## Scheme :

	Min. Pass marks 35 :	Max. marks 100
Paper I	Biology (Botany) (3 hrs. duration)—	50 marks
Paper II	Biology (Zoology) (3 hrs. duration)—	50 marks

1. The cell, both plants and animals, and its structure at (a) optical level, and (b) lectro-microscope level.
2. Cell division (a) Mitosis—stages of cell division. (b) Meiosis or reduction division. Chromosomal characteristics.
3. Chromosomes and genes : Mutation and the concept of genes. The chromosomal hypothesis. Mendel's laws of inheritance.
4. Tissues and tissue systems. Primary structure of root, stem and leaf. Secondary growth in root and stem. Hydrophytes and xerophytes and their anatomical structure.
5. Classification (Bentham and Hooker). Diagnostic characters and economic importance of Brassicaceae, Malvaceae, Leguminosae, Solanaceae, Asteraceae and Liliaceae.
6. General characters, life history and systematic position of : Bacteria, *Ulothrix*, *Albugo*, *Fumaria* or any other moss, a fern, and an angiosperm. External morphology of *Cycas*.
7. Principles of plant physiological processes of absorption, transpiration, ascent of sap, mineral nutrition, respiration, photosynthesis, growth and movements.

Practical work based on Paper-I :

The practical examination will be based on the theory syllabus.

1. Description and identification of plants belonging to the families Brassicaceae, Malvaceae, Leguminosae, Solanaceae, Astera-ceae and Liliaceae.

2. Structural study of *Ulothrix*, *Albugo*, *Funaria* or any other moss and a fern. External morphology of *Cycas*. A study of angiosperm life cycle by means of slides and specimens only (T.S. anther; T.S. and L.S. of ovule showing mature embryo sac. L.S. of Seed.)
3. Demonstration of simple experiments on plant physiology Root pressure; Osmosis (by thistle funnel); Transpiration (Bell jar experiment) Farmer's potometer. Photosynthesis-evolution of the oxygen (inverted funnel experiment) (  $O_2$  and light are necessary for photosynthesis. Respiration-demonstration of aerobic and anaerobic respiration.
4. Anatomy of stem (sunflower and *Ruscus*) root (*Pinus* and maize) leaf (sunflower and *Saccharum*). Suitable substitute of the above may be used.

### 5. BIOLOGY WITH BOTANY (Hons.)

Three Paper		Duration	Max Marks.	Min. Pass Marks
Paper—I	Botany	3 hrs.	70	84
Paper—II	Zoology	3 hrs.	70	
Paper—III	Botany	3 hrs.	70	

#### Hons. Biology Paper I Botany)

1. The cell, both plants and animals, and its structure at (a), optical level, and (b) electron microscope level.
2. Cell division. (a) Mitosis-stages of cell division (b) Meiosis or reduction division. Chromosomal characteristics.
3. Chromosomes and genes; Mutation and the concept of genes. The chromosomal hypothesis. Mendel's laws of inheritance.
4. Tissues and tissue systems. Primary structure of root, stem and leaf. Secondary growth in root and stem. Hydrophytes and xerophytes and their anatomical structure.
5. Classification (Bentham and Hooker). Diagnostic characters and economic importance of Brassicaceae, Malvaceae, Leguminosae, Solanaceae, Asteraceae and Liliaceae.



6. General characters, life history and systematic position of *Bacteria*, *Ulothrix*, *Albugo*, *Funaria* or any other moss, a fern, and an angiosperm. External morphology of *Cycas*.

7. Principles of plant physiological processes of absorption, transpiration, ascent of sap, mineral nutrition, respiration, photosynthesis, growth and movements.

#### Practical work based on Paper I :

The practical examination will be based on the theory syllabus.

1. Description and identification of plants belonging to the families Brassicaceae, Malvaceae, Leguminosae, Solanaceae, Asteraceae and Liliaceae.

2. Structural study of *Ulothrix*, *Albugo*, *Funaria* or any other moss and a fern. External morphology of *Cycas*. A study of angiosperm life cycle by means of slides and specimens only (T.S. anther; T.S. and L.S. of ovule showing mature embryo-sac. L.S. of seed).

3. Demonstration of simple experiments on plant physiology. Root pressure; Osmosis (by thistle funnel); Transpiration (Bell jar experiment) Farmers potometer. Photosynthesis-evolution of oxygen (inverted funnel experiment)  $\text{CO}_2$  and light are necessary for photosynthesis. Respiration-demonstration of aerobic and anaerobic respiration.

4. Anatomy of stem (sunflower and *Ruscus*) root (*Tinospora* and maize) leaf (sunflower and *Saccharum*). Suitable substitute of the above may be used.

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MINUTES OF THE MEETING OF THE BOARD OF  
STUDIES IN URDU, PERSIAN AND ARABIC,  
HELD ON THE 14/15TH SEPTEMBER 1979,  
AT 12.00 NOON AND 9.00 A.M. RES-  
PECTIVELY IN V.C.'s SECRETA-  
RIAT ( NEW BUILDING ),  
UNIVERSITY CAMPUS,  
JAIPUR.

The following were present :

1. Shri Feroz Ahmed.
2. Dr. F.I. Rizvi
3. Shri Mazhar Ali
4. Dr. A. F. Usmani
5. Dr. Saqib Hasan Rizvi
6. Dr. Zaheer Ahmed Siddiqi
7. Dr. Mohammed Ali Zaidi (*Convener*)

1. Under Sec. 34 4(IV) of the University Act. Dr. Fazle Imam Rizvi, Head of the Deptt. of Urdu, University of Rajasthan, Jaipur, was elected as a member (other than the convener) to serve on the committee for the selection of Examiners in the subjects for the year.

2. The Board *revised* the panel of examiners and brought it up-to-date in terms of Section (25) (2) (a).

3. The report of the examiners were not placed before the Board, hence no comment could be offered. Last year also the same thing had happened. Office should be careful. It is suggested by the members that a meeting of the Board be called for going through the reports.

4. The Board recommended the following courses of study and text books in the subjects for the various examinations together with the relevant additions and/or alterations to the regulations and observations :

## URDU

## I. (a) Pre-University Examination of 1982 :

Division of marks shall remain the same.

The names of Books prescribed are as follows :—

1. Adab pare (prose) Edited by Prof. Ehtasham Husain, Idara-e Faroghe Urdu, Lucknow. Rs. 5.50 in place of Adabi Zeene.
2. Adab pare (Nazm) Edited by Prof. Ehtasham Hussain Idara-e Faroghe Urdu, Lucknow. (In place of Adabi Namooone Nazam)
3. Nazeer Ahmed Ki Kahani—Continued.

## II. (b) Degree Examinations :

( i ) *First Year T.D.C. Pass course, 1982 :*

No change, except Silk-e-gohar by Prof. Ehtasham Husain, Idara-e-Fatogghe Urdu, Lucknow, Rs. 4.00 in place of Intekhab-e-Chakbast.

The following portions only are prescribed :

(a) Masnavi—Mir Hasan and Hali

(b) Manzumat—Nazeer Akbarbadi, Sehar ashob.

Hali—Inqilab-e-zamana, Jadeed Taraq-qiyat. Akbar Allahabadi—Woh aur hum, Mustaqbil. Chakbast-Ram Chanderji ki rukhsat, Saire Dhera Dun.

Iqbal—Gule rangeen, Farishte Adam ko jannat se rukhsat karte hain.

Safi—Taron bhari rat, Urdu-e-moalla

( ii ) *Second Year T.D.C. (Pass) Course, 1982 :*

Paper I.....No change

Paper II.....No change

( iii ) *Third Year T.D.C. (Pass) Course, 1982 :*

Paper I—(Division of marks shall remain the same)  
No change except Intekhab-e-Nasr Bara-e-B.A. Edited by U.P. Urdu Academy, Lucknow, is prescribed in place of Naqooshe adab.

The following topics are omitted :

Paper II—No change except Bewa by Prem Chand is prescribed in place of Firdause bareen by Abdul Haleem Sharar.

### III. (c) Honours Examinations (Three Years Course) :

#### (a) Part I Examination of 1982.

Paper I—No change.

Paper II—No change.

#### (b) Part II Examination of 1982.

Paper III—No change except Shareef zada by Mirza Hadi Ruswa is prescribed in place of Bewa by Prem Chand.

Paper IV—No change.

#### (c) Part III Examination of 1982

Paper V—No change.

Paper VI—Rewrite 'Special study of poet 'Ghalib' with Radeef Alif of his Diwan or Prosewriter—'Hali' with Muqadmae sher-o-shairi" instead of "Special study of a poet or Prose-writer-Ghalib or Hali".

#### *Books recommended :*

No change except add 'Ghalib-Shakhs aur shair by Majnoon Gorakhpuri.

Paper VII—No change.

Paper VIII—No change.

IV. Diploma courses in Modern Persian and Certificate course in Persian Examination-1982.....No change.

V. Post Graduate Examinations :

- |                                  |                   |
|----------------------------------|-------------------|
| (a) Previous Exam. of 1982.      | } Vide appendix A |
| (b) Final (Annual) Exam. of 1982 |                   |

VI. M.Phil. Examination of 1982..... . No change.

Persian :

- (a) Pre-University Examination of 1982.....No change.
- (b) First Year T.D.C. (Pass) Course  
Exam. of 1982 ..... No change.
- (c) Second Year T.D.C. (Pass) Course Exam. of 1982  
Paper I—No change.  
Paper II—No change.
- (d) Third Year T.D.C. (Pass) Course Exam. 1982.  
Paper I—No change.  
Paper II—No change.

5. With reference to Ac. Council Res. No. 4 A (ii) dated the 15/16th May, 1979, the Board resolved to request the University to provide steno-cum-translator for writing the Hindi version and desired to maintain statusquo till then.

6. With reference to Academic Council Res. No. 10 dated the 1st June, 1979, and the Syndicate Res. No. 3 dated the 16th June, 1979, the Board made the necessary re-arrangements of the courses of study consequent upon the abolition of Unit System.

7. With reference to the Ac. Council Res. No. 11 dated 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979, the Board has done minor re-adjustments in the M.S.S. of 1979 edition of the syllabus applicable for the Prev. Exam. of 1981 and Final Exam. of 1982.

8. *The Board resolved that Viva-voce Examination be conducted from the Examination of 1980 as usual with the facility to offer Paper IX in lieu of Viva-voce.*

Courses of an alternative paper (Paper IX) to be offered in lieu of Viva-voce have already been recommended and no change is proposed in the course.

9. With reference to Ac.Council Res. No. 10 (i) dated the 11th March, 1979 the Board considered a proposal of Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi and is not in favour of conducting viva-voce in Dissertation.

10. The Board went through the letter and syllabi for population study in the Under-graduate and offered no comments since it does not concern the Board of studies in Urdu, Persian and Arabic.

The meeting ended with a vote of thanks to the chair.

*Sd/—*

M.A. Zaidi

*Convener,*

Board of Studies in Urdu,  
Persian and Arabic,

## APPENDIX—A

## M.A. (Urdu) Annual Scheme.

## M.A. (Previous) Examination of 1982 :

Paper I	Nazm and Ghazal	Marks 100
Paper II	Nasr (Dastan, Novel, Short Story, Drama, Essay and letters)	Marks 100
Paper III	Special Study of a poet or prose writer.	Marks 100
Paper IV	History of Urdu Literature.	Marks 100

## M.A. (Final) Examination of 1983 :

Paper V	Qasida, Marsiya and Masnavi.	Marks 100
Paper VI	Criticism.	Marks 100
Paper VII	Subsidiary language	Marks 130
	or	
	Humour and Satiye (Tanz-o-Mizah)	Marks 100
Paper VIII	Essay and Translation	Marks 100
	or	
	Dissertation	Marks 100
Paper IX	Gen. Survey of Urdu Literature	Marks 100
	or	
	Viva-voce	Marks 100

## M.A. (Urdu) Previous Examination of 1982 :

Paper 1.	Ghazal and Nazm :	3 Hours duration	Marks 100
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*Note* :—Two questions on critical explanations of two extracts each, out of three extracts of Ghazal and three extracts of Nazm shall be compulsory Five questions in all.

*Books Prescribed :*

1. Mutala-e-Wali edited by Sharib Radaulvi (Radeef' Alif).
2. Intekab-e-Kalam-e-Meer by Dr. Mohammed Hasan (Radeef' Alif)
3. Diwan-e-Ghalib edited by Malik Ram (Radeef 'Ye')
4. Aftab-e-Dagh (Radeef 'Noon')
5. Gul-e-Naghma (First twenty Ghazalyat)
6. Nazeer Akbarabadi : Admi Nama, Hali Nama, Banjara Nama.
7. Akbar Allahabadi : Ek but-e-Seemin badan se karliya London men aqd, Burq-e-Kalisa, Saiyed se aaj hazrat-e-waiz ne ye kaha,

8. Iqbal : Tulu-e-Islam, Masjid-e-Qurtaba, Lenin Khuda ke hazoor men.
9. *Faiz* : Mujh se pehli si Mohabbat mere Mehboob na mang. Ham jo tareek rahon men mare gaye, Azadi, ki subh, Shishon ka Masiha koyee nahin.
10. *Josh* : Intekhab-e-Josh (Rang-e-Boo aur Shoale) Murattaba Prof. Ehtesham Hussain. First three Nazmen from Rang-o-Boo and First three Nazmen from Shoale.
11. *Sardar Jafri* : Perahan-e-Sharar, Tashqand ki ek Sham.

*Books recommended :*

1. Wali Gujrati  
By Dr. Zaheeruddin Madam.
2. Meer, Hayat aur Shairi  
By Dr. Kkawaja Ahmed Farooqi.
3. Ahang-e-Ghalib  
By Yousuf Husain Khan.
4. Urdu Ghazal  
By Yousuf Hussain Khan.
5. Meeraur Meeriyat  
Dr. Safdar Aah.
6. Ghalib Shakhs aur Shair  
By Majnu Gorakhpuri.
7. Ghazal ki sarguzasht  
By Mr. Akhtar Ansari.
8. Rooh-e-Iqbal  
By Dr. Yousuf Hussain Khan.
9. Akbar Allahabadi 'Samaji wa Siyasi Mutalea.'  
By Dr. Afsah Zafar.
10. Iqbal Falsafi aur Shair  
By Wiqar Azim.
11. Nae Nazm ka safar  
By Khalil-ur-Rehman Azmi.
12. Nae Nazm ki karwaten  
By Dr. Wazir Agha.

Paper II Nasr (Dastan, Novel, Short Story, Drama, Essays and Letters) :—

*Note* :—One question on critical explanation of two extracts out of three extracts shall be compulsory. Five questions in all.



*Books Prescribed :—*

1. Bagh-o-Bahar  
By Meer Amman.
2. Tobatun-Nusooh  
By Nazir Ahmed.
3. Umrao Jan Ada,  
By Mirza Hadi Ruswa.
4. Wardat  
By Prem Chand.
5. Undata  
By Krishn Chandra.
6. Silver King  
By Agha Hashr Kashmiri.
7. Anar Kali  
By Imtyaz Ali Taj.
8. Nairang-e-Khyal part I,  
By Maulana Mohd. Hussain Azad.
9. Ghubar-e-Khatir 'First ten Makatib'  
By Maulana Abul Kalam Azad.
10. Khutoot-e-Ghalib (Allauddin Alaae ke Nam)  
Edited by Malik Ram.
11. Intekhab-e-Mazameen-e-Sir Syed,  
Edited Ale Ahmed Saroor.

*Books recommended :*

1. Fan-e-Dastan Goe  
By Kalimuddin Ahmed.
2. Naya Afsana  
By Wiqar Azim
3. Urdu Novel ki Tareekh  
By Ali Abbas Husaini.
4. Urdu Drama Tareekh-o-Tanqeed  
By Ishrat Rehmani.
5. Bagh-o-Bahar  
Edited Salim Akhtar (Muqadma)
6. Urdu Drame ka Irtiqa  
By Ishrat Rahmani.
7. Prem Chand Kahani ka Rehnuma  
By Dr. Jafar Raza.
8. Dastan se Afsane tak  
By Wiqar Azim.
9. Munshi Premchand (Shakhshiyat aur Karname)  
By Qamar Rais.

10. Hamari Dastanen  
By Wiqar Azim.
11. Urdu Drama Riwayat aur Tajriba  
By Atiya Nishat.
12. Urdu ki Nasri Dastanen  
By Dr. Giyan Chanda Jain.

Paper III Special study of a poet or prose—writer : Dagh or Iqbal  
or Anees or Sir Syed or Sharar. Marks 100

*Note* :—One question on critical explanations of two extract  
of prose or poetry shall be compulsory.

Paper IV History of Urdu Literature : Marks 100

*Topics Prescribed :*

1. Urdu Zaban ki Ibtada.
2. Deccan men Urdu Nasr-o-Nazm ka Irteqa.
3. Shimali Hind men Urdu Nasr ka Irteqa.
4. Delhi aur Lackhnow ka Dabistan-e Shairi.
5. Jadeed Shairi.
6. Taraqqi Pasand Adab.
7. Jadeed Nasr ka Aaghaz-o-Irteqa.
8. Tareekh-e-Adabe Hindi.

*Note* :—Questions will not be set on any particular author  
but on general trends. One question on tareekh-e-  
adab-e-Hindi with internal choice shall be  
compulsory.

*Books recommended :*

1. Urdu Adab ki Tareekh  
By Naseem Qurashi.
2. Deccan men Urdu  
By Nasiruddin Hashmi.
3. Muqadmae Zuban-e-Urdu  
Dr. Masood Husain Khan.
4. Lucknow ka Dabistan-e-Shairi.  
By Abul Lais Siddiqi.
5. Delhi ka Dabistan-e-Shairi  
By Dr. Noorul Hasan Hashmi.
6. Tareekh-e-Adab Urdu.  
By Jamil Jalibi.
7. Urdu Sahitya ka Alochnatmak Itihas.  
By Prof. Ehtisham Husain.
8. Taraqqi-e-Pasand Adab  
By Sardar Jafri.

9. Hindi Adab ki Tareekh  
By Dr. Mohd. Hasan.
10. Nai Adabi Rujhanat  
By Dr. Aijaz Husain.
11. Roshnaee.  
By Sajjad Zahir.
12. Gilchrist aur uska hed  
By Mohd. Atiq Siddiqi.

### M.A. (Final) Examination of 1983

Paper V : Qasida, Marsiya and Masnavi.

Marks 100

*Note* :—One question on Critical explanations of at least two extracts out of three shall be compulsory.

### *Prescribed Peom :*

1. Sauda : Uthh gaya behmano de ka Chamanistan se Amal.
2. Zauq : Zahe Nishat agar kijiye ise tehreer.
3. Mohsin Kakorvi : Simt kashi se chala janib-e-Mathura badal.
4. Zameer : Kis noor ki majlis men meri jalwagari hai.
5. Anees : Jab qata ki Masafate Shab-a-Aftab ne.
6. Dabeer : Paida Shua-e-Mehr ki Miqraz jab huee.
7. Meer Hasan : Masnavi Sehrul Bayan.
8. Naseem : Gulzar-e-Naseem.
9. Nawab Mirza Shauq : Zehre Ishq.

### *Books recommended :*

1. Urdu Qasida Nigari ka Tanqeedi Jaeza,  
By Prof. Mehmood Ilahi.
2. Urdu men Qasida Nigari  
By Abu Mohammed Sahar.
3. Urdu Marsiya  
By Sifarish Husain.
4. Urdu Marsiye ka Irtiqa  
By Dr. Masih-uz-Zaman.
5. Mawazna-e-Anis-o-Dabeer  
By Shibli Noamani.
6. Urdu Masnavi Shimali Hind men  
By Dr. Giyan Chand Jain.
7. Urdu Masnavi ka Irtiqa  
By Abdul Qadir Sarwari.
8. Urdu men Masnavi Nigari  
By Dr. Mohammed Aqeel.

## Paper VI : Criticism :—

Marks 100

The following topics are prescribed.

1. Farsi, Arabi aur Sanskrit men Tanqeed ke Assol.
2. Urdu men Ibtedayee Tanqeed : Tazkire
3. Tanqeed ke iadeed Asool.
4. Urdu men Jadeed Tanqeed.
5. Amali Tanqeed—Ghazal, Marsiya, Nazm, Afsana aur Drama.
6. Angrezi men Tanqeed ke Asool aur Urdu men unka Istemal.

*Books recommended :*

1. Tanqeed ke bunyadi Masail  
By Ale Ahmed Saroor.
2. Jadeed Urdu Tanqeed 'Asool aur Nazriyat'  
By Sharib Rudolvi.
3. Urdu Tanqeed ki Tareekh  
By Dr. Masih-uz-Zaman.
4. Urdu Tanqeed per eik Nazar,  
By Kalimuddin Ahmed.
5. Tanqeedi Nazriyat part I and II.  
By Prof. Ehteshem Husain.
6. Tanqeedi Zaviye.
7. Essays in Criticism,  
By T.S. Eliot.
8. The Principles of Literary Criticism.  
By Abor Crombee.

## Paper VII Subsidiary language :—

Marks 100

Hindi No change

Marathi No change

or

Bengali No change

or

Arabic : Following books are prescribed :—

1. Naftu-u-Yaman.
2. Kitabul sarf-o-kitabul nehve by Molvi Abdul Rahman.
3. Qiratur-rashida by Abul Hasan Ali Nadvi Part III.

or

Persian : Division of marks :

1. Translation of Prose passages into Urdu— 25
2. Explanation of couplets into Urdu— 25
3. Translation of Urdu Passage into Persian— 20

4. General question on the life a prose-writer/Poet or Prescribed lesson.—	15
5. Grammar—	15
Total Marks	100

*Books prescribed :*

- Intekhab-e-Nazm-o-Nasr-e-Farsi barae M.A., edited by Deptt. of Urdu, Muslim University, Aligarh.  
The following are omitted :
  - Nazm :—( i ) Masnavi—Ameer Khusro.  
( ii ) Ghazalyat-e-Ghalib.
  - Nasr :—( i ) Qaboos Nama.  
( ii ) Ruqaat-e-Alamgiri.
- Farsi Grammer by Saiyad Ishaq Ali.

*Note* :—Only such candidates can offer subsidiary language who have not studied that language at the Intermediate level or its equivalent or above.

Paper VIII . Alternative paper : Humour and satire      Marks 100

- Topics :—1. Detail study of Humour, wit and satire.  
2. Its evolution and development in Urdu Litt.

*Books Prescribed :*

- Khandan  
By Kasheed Ahmed Siddiqi.
- Bal-o-par  
By Kanhyya Lal Kapoor.
- Pitras ke Mazameen  
By Pitras Bukhari.
- Beharhal,  
By Mujtuba Husain.
- Kulyat-e-Akbar Allahabadi (Only Humourous portion)
- Sodeshi Rail,  
By Shaukat Thanvi.
- Mata-e-wahi  
By Kaza Wahi Naqvi.  
(First fifty pages)
- Minto ke Afsane,  
By Saadat Hasan Minto.
- Zarguzisht,  
By Mushtaq Ahmed Yousfi.

12. Ulta Darakhlat  
By Krishn Chander.

*Books recommended :—*

1. Naqoosh-Tanzo-Mizah Number.
2. Tanziyat-o-Mazhakat.  
By Rasheed Ahmed Siddiqi.
3. Urdu Adab men Tanzo-Mizah,  
By Wazeer Agha.
4. Shakhar, Tanzo Mizah Number.
5. Aajkal, Tanzo-Mizah Number.
6. Urdu Adab men Tanzo-Mizah.  
By Furgat Kakorvi.
7. Jadeed Urdu Adab  
By Dr. Mohammed Hasan.
8. Aaj ka Urdu Adab  
By Dr. Abul Lais Siddiqi.

Paper IX : Essay and Translation :—

Essay :	80 marks	} Total Marks 100
Translation :	20 marks	

Essay on an advanced literary topic out of six topics.

Translation of an English/Persian/Hindi Passage in to Urdu.

Paper X : Gen. Survey of Urdu Literature Marks 100  
or No Change.

Viva-Voce Marks 100

Convener.  
( M.A. Zaidi )

हिन्दी पाठ्यक्रम मण्डल की बैठक दिनांक 3.9.79 तथा 4.9.79 को विश्वविद्यालय कुलपति सचिवालय (नये भवन) जयपुर में सम्पन्न हुई ।

उपस्थिति :

1. डा० सत्येन्द्र चतुर्वेदी (संयोजक)
2. डॉ० नामवर सिंह
3. डॉ० लक्ष्मीसागर वाण्येय
4. डॉ० लक्ष्मीकांत शर्मा
5. श्री भालचन्द्र नागर
6. श्री होतीलाल भारद्वाज

1. विश्वविद्यालय एक्ट के सैक्शन 34(4)(iv) के अन्तर्गत डा० लक्ष्मीकांत शर्मा, दयानन्द कालेज, अजमेर को संयोजक के अतिरिक्त परीक्षा समिति का सदस्य चुना गया ।

2. परिनियम संख्या (25)(2)(a) के अन्तर्गत विभिन्न महाविद्यालयों तथा विश्वविद्यालयों के विभागों से प्राप्त प्राध्यापकों की योग्यताओं तथा शिक्षण अनुभवों की सूची पर विचार किया गया तथा परीक्षक-सूची में आवश्यक परिवर्तन किया गया ।

3. पता चला कि परीक्षकों के प्रतिवेदन तथा प्रश्नपत्र अभी Vigilance समिति के अवलोकनार्थ हैं, प्राप्त होने पर मण्डल अपनी टिप्पणी प्रस्तुत करेगा ।

4. पाठ्यक्रम मंडल ने विभिन्न परीक्षाओं के पाठ्यक्रम एवं पाठ्यपुस्तकों आदि में निम्नप्रकार संशोधन की संस्तुति की :—

( i ) ग्री यूनिवर्सिटी परीक्षा. 1982

( ii ) डिग्री परीक्षाएँ :—

(अ) प्रथम वर्ष परीक्षा (सामान्य हिन्दी) 1981/82

(व) द्वितीय वर्ष परीक्षा, 1982

(स) तृतीय वर्ष परीक्षा. 1982

## (iii) ऑनर्स परीक्षाएँ

(अ) पार्ट I 1982

(ब) पार्ट II 1982

(स) पार्ट III 1982

## (iv) डिप्लोमा परीक्षाएँ, 1982

## (v) स्नातकोत्तर परीक्षाएँ,

(a) एम०ए० (प्रीवियस) परीक्षा, 1982

(b) एम०ए० (फाइनल) परीक्षा 1983

## (vi) एम०फिल. परीक्षा 1982

उपयुक्त समस्त परीक्षाओं के पाठ्यक्रम संलग्न परिशिष्ट-I परीक्षाओं के अनुसार होंगे।

5 हिन्दी पाठ्यक्रम पहले से ही हिन्दी में है अतः उसके अनुवाद की आवश्यकता नहीं है।

6. इकाई विधि (Unit System) के संदर्भ में पाठ्यक्रम समिति ने विचार किया तथा संस्तुति की कि विभिन्न पाठ्यक्रमों में इकाई विधि को हटा दिया जाए। हिन्दी पाठ्यक्रम समिति ने 1981 की परीक्षा के लिए निर्धारित 1979 संस्करण पाठ्यक्रम की पाण्डुलिपि में तत्सम्बन्धी परिवर्तन किया।

7. (Semester System) सेमिस्टर प्रणाली के विषय में पाठ्यक्रम समिति ने सारस्वत सभा (Academic Council) तथा सिडीकेट के प्रस्तावों पर विचार किया तथा संस्तुति की कि सेमिस्टर प्रणाली 1981 की परीक्षा के लिए निर्धारित 1979 संस्करण पाठ्यक्रम की पाण्डुलिपि में पाठ्यक्रम समिति ने तत्सम्बन्धी उपयुक्त परिवर्तन किया।

8. हिन्दी पाठ्यक्रम समिति ने निदेशक, पत्राचार अध्ययन एवं सतत शिक्षा संस्थान के पत्र के संदर्भ में सारस्वत सभा के एम ए/एम.कॉम. के परीक्षार्थियों के लिये मौखिक परीक्षा लेने के विषय में विचार किया तथा संस्तुति की :

- ( i ) पत्राचार अध्ययन संस्थान के एम ए./एम.कॉम. के परीक्षार्थियों को 1980 की परीक्षा में मौखिक परीक्षा की सुविधा प्रदान की जाए।



- ( ii) कालिजिएट, नॉनकालिजिएट तथा पत्राचार संस्थान के परीक्षार्थियों को समान रूप से मौखिक परीक्षा लेने की सुविधा प्रदान की जाए तथा सभी परीक्षार्थियों के लिए मौखिक परीक्षा अनिवार्य हो। अतः मौखिक परीक्षा के विकल्प में किसी अन्य प्रश्नपत्र के पाठ्यक्रम की आवश्यकता नहीं है।
- ( iii) मौखिक परीक्षा सभी वर्ग के परीक्षार्थियों के लिये आवश्यक है। अतः वैकल्पिक प्रश्न पत्र के पाठ्यक्रम के निर्धारण की आवश्यकता नहीं है।

9. सारस्वत सभा के निश्चय संख्या 10(1) दिनांक 11 मार्च, 1979 के अनुसार हिन्दी पाठ्यक्रम समिति के संयोजक डा. सत्येन्द्र चतुर्वेदी के पत्र पर पाठ्यक्रम समिति ने विचार किया तथा संस्तुति की कि ;

लघुशोध प्रबंध की मौलिकता तथा उसके सम्यक् मूल्यांकन की दृष्टि से लघुशोध प्रबंध लेने वाले परीक्षार्थियों के लिये उससे सम्बन्धित मौखिक परीक्षा का प्रावधान किया जाय।

10. संकाय के निश्चय संख्या 8 दिनांक 23/3/79 के अनुसार पाठ्यक्रम समिति ने मूल्यांकन अधिकारी, भारतीय विश्वविद्यालय परिषद्, नई दिल्ली से प्राप्त निश्चय पर विचार किया तथा संस्तुति की कि जनसंख्या नीति सम्बन्धी पाठ्यक्रम को स्वीकार कर लिया जाए।

11. पाठ्यक्रम समिति ने राजस्थान हिन्दी परिषद् के अध्यक्ष डा. राधेश्याम त्रिपाठी के पत्र संख्या 2682 दिनांक 12.6.79 का अवलोकन किया तथा निर्णय लिया कि पत्र के बिन्दुओं के अनुरूप पाठ्यक्रम निर्माण करते समय समुचित ध्यान दिया जाएगा।

12. पाठ्यक्रम समिति ने श्री स्वर्ण गिरितीर्थ, जालौर के सचिव के पत्र पर विचार किया तथा संस्तुति की कि 'कान्हड़देव प्रबंध' शीर्षक ग्रन्थ की प्रति संग्रहीत की जाए तथा पाठ्यक्रम समिति के समक्ष विचारार्थ रखी जाए।

13. पाठ्यक्रम समिति ने सारस्वत सभा के निश्चय संख्या 21 दिनांक 11 मार्च 1979 के संदर्भ में राजस्थानी भाषा के अलग पाठ्यक्रम के विषय में विचार किया तथा सभी पक्षों पर विमर्श करते हुए निर्णय किया कि राजस्थानी भाषा के अध्ययन-अध्यापन से वर्तमान परिस्थितियों में कोई लाभ नहीं होगा।

15. सारस्वत सभा के निश्चय संख्या 13 दिनांक 1 जून 79 के अनुसार नियुक्त समिति के कार्यवाही विवरण का पाठ्यक्रम समिति ने अवलोकन किया तथा संस्तुति की कि अभ्यासपुस्तिका (Work-Book) की रूपरेखा बनाने से पूर्व सम्पन्न विवेचन करने के लिए निम्नलिखित सदस्यों की उपसमिति को अभ्यास-पुस्तिका के अधिकारी विद्वान डा० एन०के० सिंह, NCERT, नई दिल्ली से सम्पर्क हेतु अविलम्ब भेजा जाए :—

(1) डॉ० सत्येन्द्र चतुर्वेदी संयोजक

(2) श्री होतीलाल भारद्वाज,

( ) श्री भालचन्द्र नागर

यह भी अनुशंसा की जाती है कि विश्वविद्यालय इन सदस्यों को इस कार्य की क्षतिपूर्ति हेतु दिल्ली भेजने की व्यवस्था करें।

16. कला संकाय के निश्चय संख्या 14 (3) दिनांक 23 मार्च, 1979 पर पाठ्यक्रम समिति ने विचार किया तथा संस्तुति की कि भाषा शिक्षण प्रशिक्षण के पाठ्यक्रम की विस्तृत रूपरेखा तैयार करने हेतु निम्नलिखित सदस्यों की एक उप-समिति बनाई जाए तथा इन सदस्यों को विषय के अधिकारी विद्वान डा. बाल-गोविन्द मिश्र, केन्द्रीय हिन्दी संस्थान, नई दिल्ली से सम्पर्क करने हेतु अविलम्ब भेजा जाए :—

1 डॉ० सत्येन्द्र चतुर्वेदी संयोजक

2. डा. लक्ष्मीकान्त शर्मा

3. डॉ० नाथूलाल पाठक

यह भी अनुशंसा की जाती है कि विश्वविद्यालय इन सदस्यों को इस कार्य हेतु दिल्ली भेजने की तत्काल व्यवस्था करे।

17. सचिव, विश्वविद्यालय अनुदान आयोग, नई दिल्ली के पत्र संख्या F 1-71/78 CP दिनांक 16 अप्रैल 1979 पर तथा उसके साथ आये पाठ्यक्रम को पाठ्यक्रम मण्डल ने नोट किया तथा उस पर आगे विचार करने का निश्चय किया।

18. सारस्वत सभा के निश्चय संख्या 4(1) दिनांक 1 जून, 1979 पर पाठ्यक्रम मण्डल ने विचार किया तथा निश्चय किया कि इससे सम्बन्धी संस्तुति क्रमांक 4 पर उल्लिखित है।

19 पाठ्यक्रम मण्डल ने संस्तुति की कि 1982 की विभिन्न परीक्षाओं के लिये निर्धारित पाठ्यक्रम को ही 1981 की विभिन्न परीक्षाओं के लिए भी स्वीकार किया जावे ।

डा० सत्येन्द्र चतुर्वेदी,  
संयोजक,  
हिन्दी पाठ्यक्रम मंडल

## परिशिष्ट I

## Pre-University (Arts) Examination

(1981 एवं 1982 की परीक्षा के लिए)

## SYLLABUS &amp; TEXT BOOKS

## Compulsory Subjects :—

## सामान्य हिन्दी

इस परीक्षा में 100 अंकों का एक प्रश्न पत्र 3 घण्टे की अवधि का होगा। न्यूनतम प्राप्तांक 33 होंगे।

## अंक विभाजन :—

- |  |        |
|--|--------|
| (क) पाठ्य पुस्तकों से सम्बन्धित, 3 प्रश्न—                     | 50 अंक |
| (ख) सामान्य विषय पर एक निबन्ध—                                 | 20 अंक |
| (ग) छुट्ट भाषा-बोध से सम्बन्धित प्रश्न।<br>इसके तीन भाग होंगे— |        |
| (i) भाव बोध—   | 10 अंक |
| किसी अनुच्छेद के भाव को अपने अनेक वाक्यों में<br>समझना।        |        |
| (ii) शब्द-प्रकार-बोध और प्रयोग—                                | 20 अंक |
| (अ) भाववाचक संज्ञाओं का बोध और प्रयोग                          |        |
| (ब) विशेषणों का बोध और प्रयोग                                  |        |
| (न) क्रियाविशेषणों का बोध और प्रयोग                            |        |
| (द) अकर्मक और सकर्मक क्रियाओं का बोध और<br>प्रयोग।             |        |

## पाठ्य पुस्तकें :—

- (1) गद्य सरिता—ले० उमिता उपाध्याय  
प्र० पदम दुक कम्पनी, जयपुर मूल्य 3.50
- (2) काव्य-रश्मि—डॉ० सुशीला नार प्र अजमेरा दुक कं., जयपुर  
मूल्य—
- (3) अग्निपर्व—रामनारायण गोयल, प्र० अभिनव प्रकाशन, अजमेर  
मूल्य 6.00

सहायक पुस्तकें :—

- (1) राष्ट्रभाषा व्याकरण तथा रचना—ले० डॉ० वचनदेव कुमार  
'विकल', प्र० हिन्दी साहित्य संसार, नई सड़क, दिल्ली

मूल्य 2.50 रु०

- (2) सरल व्याकरण तथा रचना—ले० व्यथित हृदय, संशोधनकर्ता  
डॉ० अम्बाप्रसाद सुमन, प्र. श्रीराम मेहरा एण्ड कम्पनी, आगरा

मूल्य 2 50 रु०

- (3) व्यावहारिक हिन्दी व्याकरण तथा रचना—महेन्द्र चतुर्वेदी,

### हिन्दी साहित्य

इसमें एक प्रश्न-प्रश्न 100 अङ्कों का होगा और समय 3 घण्टे का होगा। इसमें गद्य, पद्य छंद तथा अलंकार आदि सम्मिलित होंगे।

गद्य के लिए पाठ्यपुस्तक :

गद्य संकलन—लेखक डॉ० हरवंशलाल शर्मा

प्रकाशन—कल्याणमल एण्ड संस, जयपुर।

पद्य के लिए पाठ्यपुस्तक :

काव्य लहरी—सम्पादक रामप्रसाद दाधीच

प्रकाशक—स्टूडेंट्स बुक कम्पनी, जयपुर-जोधपुर।

छन्द के लिए सहायक पुस्तकें :

1. छंद अलंकार प्रबोध : लेखक कृष्णकुमार पाठक  
प्रकाशक—स्टूडेंट्स बुक कम्पनी, जयपुर-जोधपुर।

2. काव्य दीपिका : लेखक—हरिहर भट्ट  
(प्रकाशक-रमेश बुक डिपो, जयपुर।)

निम्नलिखित छन्द पढ़ने हैं :—

चौपाई, रोला, हरिगीतिका, बीर, (आल्हा)।

वंशस्प, वंशतिलिका मालिनी, शिखरिणी, द्रुतविलम्बित।

मन्दक्रान्ता, मत्तगयंद सवैया, दुयित सवैया, घनाक्षरी (मनहरण)।

दोहा, सोरठा, कुण्डलियां, छप्पय, सार, नाटक।

निम्नलिखित अलंकार पढ़ने हैं :—

उपमा, उत्प्रेक्षा, रूपक, श्लेष, यमक, अनुप्रास।

2. प्रथम वर्ष—कला—विज्ञान—वाणिज्य  
(1981 एवं 1982 की परीक्षा के लिए)

पाठ्यक्रम  
सामान्य हिन्दी

*Scheme :*

Min. Pass Marks 36 : Max. Marks 100

एक प्रश्न पत्र, समय तीन घण्टे—पूर्णांक 100

*Syllabus :*

एक प्रश्न पत्र होगा। इसकी परीक्षा केवल 2 पाठ्य-पुस्तकों पर आधारित होगी। एक गद्य-पद्य संग्रह और एक कहानी संग्रह। इन संकलनों पर व्याख्या और विषय-वस्तु सम्बन्धी तीन सामान्य प्रश्न पूछे जायेंगे, जिनके लिए 50 अंक निर्धारित हैं।

इनके अतिरिक्त एक निबन्ध सामान्य विषय पर होगा, जिसके लिये 20 अंक निर्धारित हैं।

एक अन्य प्रश्न भाषा और व्याकरण से सम्बन्धित होगा, जिसके लिये 30 अंक निर्धारित हैं। इसका विभाजन निम्न प्रकार होगा।—

- |  |        |
|--|--------|
| (क) (i) किसी अनुच्छेद का संक्षिप्तीकरण।                            |        |
| (ii) किसी सूक्ति, कहावत या किसी मुहावरे का वृद्धिकरण।              | 10 अंक |
| (ख) व्याकरण, वर्तनी तथा विराम-चिह्नों से सम्बन्धित शुद्धिकरण।      | 5 अंक  |
| (ग) शब्द, पद एवं वाक्य विषयक संरचना तथा अनुच्छेद-व्यवस्था का परिचय | 5 अंक  |
| (घ) प्रारूप  | 10 अंक |

पाठ्य पुस्तकें :

1. समवेत—रघुवर दयाल; प्र. राजकमल प्रकाशन, दिल्ली।  
मूल्य—4.50 रु.

अथवा

साहित्य पीठ—डा० रामशरण दास गुप्त; प्र. श्री राम मेहरा  
एण्ट कं. आगरा। मूल्य 6.50 रु.

- 2 सप्तपर्णा—सुरेश चन्द्र गुप्त, प्र. फ्रैंक व्रदर्स एण्ड कं., दिल्ली ।  
मूल्य—3.75 रु

अथवा

सप्तपर्णा—मन्तू भण्डारी; प्र. मलिक एण्ड कं., जयपुर ।  
मूल्य—

सहायक पुस्तकें :

प्रथम चार पुस्तकें—यथावत

ये दो पुस्तकें और जोड़ें :—

5. हिन्दी व्याकरण तथा रचना—भोलानाथ तिवारी; प्र. नेशनल पब्लिशिंग हाऊस दिल्ली । मूल्य—  
6. हिन्दी काव्य बोध—केदार शर्मा तथा जसवन्त सिंह ।

## प्रथम वर्ष कला

(1981 एवं 1982 की परीक्षा के लिये)

## पाठ्यक्रम

## हिन्दी साहित्य

## Scheme :

Min. Pass Marks 36 : Max Marks 100

One Paper, 3 hrs. duration 100 Marks

## पाठ्यक्रम व अंक विभाजन :—

1. एक प्रश्न—4 व्याख्याएं (दो गद्य से तथा दो पद्य से सम्बन्धित) 32 अंक
2. पुस्तकों से सम्बन्धित तीन प्रश्न } 48 अंक  
(प्रत्येक पुस्तक पर एक-एक) }
3. एक प्रश्न जिसके दो भाग होंगे ।
  - (क) छंद-अलंकार—(संकलन में प्रयुक्त छन्दों का सामान्य परिचय, तथा सादृश्य मूलक अलंकारों का सामान्य परिचय-भेदोपभेदों में जाने की आवश्यकता नहीं) 10 अंक
  - (ख) आदिकालीन एवं भक्तिकालीन साहित्य के इतिहास का सामान्य ज्ञान 10 अंक
    - ( i ) युग-प्रवृत्तियों का सामान्य ज्ञान
    - ( ii ) युग के विशिष्ट कवियों एवं रचनाओं का परिचयात्मक ज्ञान ।
    - ( iii ) पाठ्य-रचनाओं का सामान्य परिचय अथवा गद्यों और पदों का व्याकरणिक बोध ।

## पाठ्य पुस्तकें :—

1. मिस्टर अभिमन्यु—लक्ष्मी नारायण लाल, नेशनल पब्लिशिंग हाऊस । मूल्य—5 रु.
2. हिन्दी काव्य संग्रह—डा. शांतिस्वरूप गुप्त (विद्यापति को छोड़कर), राजपाल एण्ड सन्स दिल्ली ।
3. नौ एकांकी—डा. दशरथ ओझा, प्रकाशक जयपुर बुक कं, अजमेर मूल्य—4.50 रु.



## अन्य पाठ्यक्रम

1. आदिकालीन तथा भक्तिकालीन साहित्य के इतिहास का ज्ञान ।
2. छन्द—(क) छन्द की परिभाषा  
(ख) छन्द के प्रकार  
(ग) दोहा, चौपाई, हरिगीतिका, गीतिका, रोला  
रत्नाला, मालिनी, छप्पय, द्रुत विलम्बित वसन्त-  
वितिका, शिखरणी, सर्वैया (मनका), कुण्डलियां ।

## सहायक पुस्तकें :

1. हिन्दी साहित्य का आदिकाल एवं भक्तिकाल—डा. ओम प्रकाश शर्मा, आर्य बुक डिपो, दिल्ली । मूल्य—2.75 रु.
2. हिन्दी साहित्य का सुबोध इतिहास—गुलाब राय ।
3. द्वितीय वर्ष कला हिन्दी वैकल्पिक (1981 एवं 82 की परीक्षा के लिये) ।

## प्रथम प्रश्न पत्र :

1. मध्यकालीन काव्य द्वारा (द्विजदेव तथा आलम को छोड़ दिया जावे)
2. काव्यशास्त्र—यथावत

## द्वितीय प्रश्न पत्र :

1. सारा आकाश
2. क्या आदान  
(ख) प्रमुख उपन्यासकार कहानीकार अथवा निबन्धाकार में  
‘अथवा निबन्धाकार’ हटाया जावे ।

## 4. तृतीय वर्ष कला (1981 एवं 82 की परीक्षा के लिये)

## प्रथम प्रश्न पत्र :

1. संविता में (श्रीधर पाठक सम्पूर्ण, सूर्यकान्त त्रिपाठी निराला की स्नेह निर्द्वार, कौन्तम के पार, महादेवी वर्मा का संकेत भरा नम, शाप मय वर, नागार्जुन का वादल को विरते देता है, मुक्तिबोध का ब्रह्मराक्षस कविताओं को छोड़कर)
2. कालजयी—भवानी प्रसाद मिश्र—भारतीय साहित्य प्रकाशन, मेरठ । मूल्य—4.50

द्वितीय प्रश्न पत्र :

1. साहित्य की राह से (डा० रामविलास शर्मा तथा कुवेरनाथ राय लिखित निबन्ध को छोड़कर)
2. साहित्यिक निबन्ध और जोड़ा जावे ।
4. ऑनर्स पाठ 1,2,3, एवं डिप्लोमा (1981 एवं 1982 की परीक्षा के लिये) यथावत ।

6 एम०ए० हिन्दी ( एनुअल स्कीम ) पूर्वाद्ध की 1981 एवं 1982 एवं अंतिम वर्ष की 1982 एवं 1983 की परीक्षाओं हेतु ।

प्रथम प्रश्न पत्र : “गद्य साहित्य”

एम० ए०

प्रथम प्रश्न पत्र :

पाठ्यपुस्तकें—

1. गोदान—प्रेमचन्द
2. बाराभट्ट की आत्मकथा—हजारीप्रसाद द्विवेदी
3. स्कन्दगुप्त—जयशंकर प्रसाद
4. लहरों के राजहंस—मोहनराकेश
5. एक दुनियाँ समानान्तर—सं० राजेन्द्रयादव
6. कांचन-मणि—सं० डा० सत्येन्द्र, कैलाश पुस्तक सदन, ग्वालियर

सहायक पुस्तकें—यथावत

द्वितीय प्रश्न पत्र :

1. कामायनी—प्रसाद (केवल चिन्ता, श्रद्धा, लज्जा तथा ईड़ा सर्ग)
2. राग-विराग—(निराला)-- सं० रामविलास शर्मा—केवल ये कविताएं पठनीय होंगी :—3,4,8,9,11,12,14,25,27,30, 31,33,35,36,37,41,71,80,89 तथा 112 ।
3. उपलब्धि—बालकृष्ण राव, रंजन प्रकाशन, आगरा ।  
(जगदीश गुप्त, महेन्द्र भटनागर, अंचल तथा बालकृष्ण राव को छोड़कर)
4. सुवर्णा—नरेन्द्र शर्मा—नेशनल पब्लिशिंग हाउस, देहली ।
5. कुक्षेत्र—दिनकर—(2,3 तथा 4 सर्ग)

सहायक पुस्तकें—यथावत

तृतीय प्रश्न पत्र :

1. भ्रमरगीतसार सूरदास—रामचन्द्र शुक्ल—101 से 300 पद तक
2. विनयपत्रिका—तुलसीदास उत्तरार्ध
3. वनानन्द—वनानन्द वदित प्रथम 100 पद
4. बिहारी रत्नाकर—बिहारी प्रथम 200 दोहे
5. मीरा मुक्तावली—सं० नरोत्तमस्वामी, लक्ष्मीलाल - श्री राम मेहरा एण्ड कं० आगरा ।

### सहायक पुस्तकें—यथावत

चतुर्थ प्रश्न पत्र :

1. पृथ्वीराज रासो—पद्मावती समय—चन्द वरदाई
2. जायसी ग्रन्थावली—माता प्रसाद गुप्त (सिंहलद्वीप, मानसरोवर, नखाशिख, नागमती, दियो वर्णन (वारहमासा) तथा उपसंहार खण्ड)
3. कवीर बाणी डा० सरनामसिंह शर्मा - प्रथम 100 साखी तथा प्रथम 25 पद्य
4. विद्यापति पदावली - सं० आनन्द प्रकाश दीक्षित

### सहायक पुस्तकें - यथावत

यह पुस्तक और जोड़ें

- 1 जायसी के काव्य का सांस्कृतिक अध्ययन - डा० भीमसिंह, कुरुक्षेत्र विश्वविद्यालय प्रकाशन, कुरुक्षेत्र ।

पंचम प्रश्न पत्र :

- (अ) संस्कृत काव्यशास्त्र इतिहास तथा त्रिविध सम्प्रदाय
- (आ) हिन्दी आलोचना - उद्भव और विकास
- (इ) पाश्चात्य आलोचना के सिद्धान्त—प्लेटो, अरस्तू, बडेंस्वर्थ, कालरिज, रिचर्ड्स, इलियट
- (ई) हिन्दी सानित्य का इतिहास

### सहायक पुस्तकें—यथावत

षष्ठम प्रश्न पत्र :

सहायक पुस्तकें—यह पुस्तक और जोड़ें—

डा० मातावदल जायसवाल - मानक हिन्दी का ऐतिहासिक व्याकरण ।

सप्तम प्रश्न पत्र :

(ख) राजस्थानी भाषा और साहित्य

दलपति विलास के स्थान पर अचलदास तथा खींची री वचनिका बालकृष्ण रुक्मनीरी—पृथ्वीराज राठौड़ सं०—नरोत्तम स्वामी—श्री राम मेहरा एण्ड कं० आगरा ।

सहायक पुस्तकों में ये पुस्तकें और जोड़ी जावे—

1. राजस्थानी कोष भाग I— डा० भूपति सावरिया तथा वट्टीप्रसाद सावरिया
2. ढोला मारू रा दूल्हा—एक अध्ययन— डा० कृष्णविहारी सहल, आत्मागम एण्ड सन्स, दिल्ली ।

(घ) (ii) हिन्दी नाटक का उद्भव विकास

1. सत्यहरिश्चन्द्र—भारतेन्द्र हरिश्चन्द्र
2. अजातशत्रु—प्रसाद
3. यक्ष प्रश्न—लक्ष्मीनारायणलाल
4. आर्षे-अर्षूरे—मोहन राकेश
5. रंगिणी—नेमिचन्द्र जैन, रंजन प्रकाशन, आगरा

(घ) (iii) हिन्दी उपन्यास का उद्भव और विकास

1. गवर्न—प्रेमचन्द
2. त्यागपत्र—जैनेन्द्र
3. दिव्या—यशपाल
4. शेखर एक जीवनी, भाग I—अज्ञेय ।
5. कब तक पुकारूँ—रांगेय रावव
6. सागर लहरें और मनुष्य—उदयशंकर भट्ट
7. बून्द और समुद्र—अमृतलाल नागर

सहायक पुस्तकों में यह पुस्तक और जोड़ें ।

आधुनिक हिन्दी उपन्यास और मानवीय अर्थवृत्ता—डा० नवलकिशोर, प्रकाशन संस्थान, दिल्ली ।

अंक विभाजन

M.A Hindi Annual Exam.

		अंक	
I	1. चार व्याख्याएँ	36	4 × 9
	2. चार प्रश्न	64	4 × 16
II	1. चार व्याख्याएँ	36	4 × 9
	2. चार प्रश्न	64	4 × 16
III	1. चार व्याख्याएँ	36	4 × 9
	2. चार प्रश्न	64	4 × 16
IV	1. चार व्याख्याएँ	36	4 × 9
	2. चार प्रश्न	64	4 × 16
V	पाँच प्रश्न	100	5 × 20

1. भारतीय काव्य शास्त्र के विभिन्न समुदाय ।
2. साहित्य की विविध विधाओं अथवा आधुनिक हिन्दी आलोचना से सम्बन्धित ।
3. पाश्चात्य आलोचना से सम्बन्धित :
4. हिन्दी साहित्य का इतिहास (आदि काल तथा मध्य काल)
5. हिन्दी साहित्य का इतिहास (आधुनिक काल)

VI पांच प्रश्न 5 × 20

1. भाषा विज्ञान 60
  2. हिन्दी भाषा तथा देवनागरी लिपि का इतिहास 40
- प्रश्न 1. (क) 1 अथवा (ख) 6 से सम्बन्धित ।
- प्रश्न 2. (क) 2 से सम्बन्धित ।
- प्रश्न 3. (क) 3, 4 अथवा 5 से सम्बन्धित ।
- प्रश्न 4. (ख) 1, 2 अथवा 3 से सम्बन्धित ।
- प्रश्न 5. (ख) 4 (क) 6 अथवा (ख) 5 सम्बन्धित ।

VII (क) आधुनिक भारतीय भाषाएँ ।

(i) उर्दू

1. तीन व्याख्याएँ 36 3 × 12
2. चार प्रश्न 64 4 × 16

(ii) मराठी

1. चार व्याख्याएँ 36 4 × 9
2. चार प्रश्न 64 4 × 16

(iii) बंगला

1. चार व्याख्याएँ 36 4 × 9
2. चार प्रश्न 64 4 × 16

(iv) गुजराती

1. तीन व्याख्याएँ 36 3 × 12
2. चार प्रश्न 64 4 × 16

तीन प्रश्न पाठ्य पुस्तकों पर

एक प्रश्न गुजराती व्याकरण या इतिहास पर

(ख) आधारभूत भाषाएँ

(i) संस्कृत

1. चार व्याख्याएँ 36 4 × 9

(दो व्याख्याएँ अभिज्ञान शाकुन्तलम् से)

2	तीन प्रश्न	48	3 × 16
	पाठ्य पुस्तकों से सम्बन्धित		
3.	एक प्रश्न	16	1 × 16
	व्याकरण से सम्बन्धित		

## (ii) पालि भाषा

1.	चार व्याख्याएँ अथवा चार अनुवाद	36	4 × 9
2.	दो प्रश्न पाठ्यपुस्तकों पर	32	2 × 16
3	एक प्रश्न पालि साहित्य के इतिहास पर		16
4	एक प्रश्न व्याकरण से सम्बन्धित		16

## (iii) अपभ्रंश भाषा

1.	चार व्याख्याएँ	36	4 × 9
2	एक प्रश्न पाठ्य भाषा से सम्बद्ध		16
3	एक प्रश्न साहित्य के इतिहास से सम्बद्ध		16
4.	एक प्रश्न अपभ्रंश भाषा के इतिहास से सम्बद्ध		16
5.	एक प्रश्न व्याख्या से सम्बद्ध		16

## (iv) राजस्थानी भाषा और साहित्य

1.	चार व्याख्याएँ	36	4 × 9
2.	एक प्रश्न भाषा के सिद्धान्त, व्याकरण अथवा भाषा के इतिहास से सम्बन्धित		16
3.	एक प्रश्न गद्य साहित्य के इतिहास से सम्बन्धित		16
4.	एक प्रश्न पद्य (काव्य) से		16
5.	एक प्रश्न गद्य-पद्य के इतिहास		16

## (ग) विशेष लेखक

## (i) तुलसी

## अंक विभाजन :—

- इसमें एक प्रश्न चार व्याख्याओं से सम्बन्धित होगा। प्रत्येक पाठ्य-ग्रन्थ से एक-एक व्याख्या एोगी। 36
- जीवनी-सम्बन्धी कोई प्रश्न अथवा कोई समीक्षात्मक प्रश्न होगा। 16
- तुलसीदास के कवित्व से सम्बन्धित सामान्य समीक्षात्मक प्रश्न होगा। 16

- इसमें किसी ग्रन्थ से सम्बन्धित समीक्षात्मक प्रश्न होगा । 16
- तुलसीदास के दर्शन, समाज, भक्ति या संस्कृति से सम्बन्धित कोई प्रश्न होगा । 16

### अंक विभाजन

- इसमें एक प्रश्न चार व्याख्याओं से सम्बन्धित होगा ।  
व्याख्याओं के लिए चार आवतरण सूरदास के उक्त ग्रन्थों से चुने जायेंगे । 36
- इसमें एक प्रश्न सूर की जीवनी से सम्बन्धित अन्यथा समीक्षात्मक होगा । 16
- इसके अन्तर्गत एक प्रश्न सूर काव्य में रस, सूर का दर्शन, भक्ति अथवा साम्प्रदायिक धरातल में सम्बन्धित होगा । 16
- एक प्रश्न कवित्व अथवा शैली में सम्बन्धित होगा । 16
- इसमें एक प्रश्न सूर-साहित्य, परम्परा और प्रभाव से सम्बन्धित होगा । 16

या

(ग) (iii) केशवदास

पूर्णांक 100—समय 3 घन्टे

### अंक विभाजन :

- इसके अन्तर्गत एक प्रश्न चार व्याख्याओं से सम्बन्धित होगा ।  
दो व्याख्याएं 'रामचन्द्रिका' से एक 'कविप्रिया' से और एक 'रसिक प्रिया' से होगी । 36
- इनमें से प्रत्येक पुस्तक पर एक-एक प्रश्न तीन पुस्तकों से सम्बन्धित होगा । 48
- इसमें केशव की काव्य-कला (जो उनके सभी ग्रन्थों से सम्बन्धित है) में सम्बन्धित एक प्रश्न होगा अथवा एक प्रश्न केशव के ऊपर सामान्य समीक्षात्मक होगा । 16

### अंक विभाजन :—

- इसमें 'भारतेन्दु' पाठ्य ग्रन्थों से सम्बन्धित चार व्याख्याएं ।  
इसमें नाटक, निबन्ध, काव्यादि से सम्बन्धित आवतरण होंगे । 36



- इन्की जीवनी अथवां दुग-प्रवृत्तियों से सम्बन्धित एक प्रश्न होगा । 16
- भारतेन्दु के नाटकों से सम्बन्धित एक प्रश्न होगा । 16
- भारतेन्दु के काव्य से सम्बन्धित एक प्रश्न होगा । 16
- भारतेन्दु के निबन्धों से सम्बन्धित एक प्रश्न होगा । 16

### सहायक ग्रन्थ :

1. भारतेन्दु हरिश्चन्द्र-बजरत्नदास - हिन्दुस्तानी एकेडेमी,  
इलाहाबाद ।
2. भारतेन्दु-कला—प्रेमनारायण मुक्ल ।
3. भारतेन्दु की विचारधारा—लक्ष्मीसागर वाष्ण्य ।
4. भारतेन्दु दुग—रामविलास घर्मा—विनोद पुस्तक मन्दिर,  
आगरा ।
5. भारतेन्दु की भाषा और बोली—गोपाल खन्ना ।

या

(iv) (v) जयशंकर 'प्रसाद'

पूर्णांक 100—समय 3 घण्टे

### पाठ्य ग्रन्थ :

1. काव्य—( i ) कामायनी—प्रसाद प्रकाशन, वाराणसी  
( ii ) लहर—प्रसाद प्रकाशन, वाराणसी ।
2. नाटक—कामना—प्रसाद प्रकाशन, वाराणसी ।
3. उपन्यास तितली—प्रसाद प्रकाशन, वाराणसी ।
4. निबन्ध काव्यकला तथा अन्य निबन्ध—प्रसाद प्रकाशन,  
वाराणसी ।

### अंक

- एक प्रश्न में चार व्याख्याएं—एक-एक प्रत्येक साहित्य से सम्बन्धित । 36
- एक प्रश्न 'प्रसाद' के काव्य से सम्बन्धित । 16
- एक प्रश्न 'प्रसाद' के उपन्यासों और कहानियों से सम्बन्धित । 16
- एक प्रश्न नाटकों से सम्बन्धित । 16
- एक प्रश्न निबन्धों या दुगप्रवृत्तियों से सम्बन्धित । 16

अथवा

सप्तम प्रश्न पत्र (घ) विशिष्ट विषय (कोई एक विषय) ।

(घ) ( i ) काव्यशास्त्र—भारतीय एवं पाश्चात्य काव्य-शास्त्र  
पूर्णांक 100—समय 3 घण्टे

इसमें अधीतव्य विषय में हैं—

(क) भारतीय काव्य शास्त्र—

( i ) रस, ध्वनि एवं औचित्य सिद्धांत ।

( ii ) अलंकार रीति एवं वक्रोक्ति सिद्धांत ।

(ख) मिश्रित सिद्धान्त—

(iii) गद्य-पद्य की विविध विधाओं से सम्बन्धित सिद्धान्त एवं  
आधुनिक हिन्दी आलोचना ।

(ग) पाश्चात्य काव्य शास्त्र -

(iv) प्लेटो—काव्य विषयक सिद्धान्त ।

(v) अरस्तु—अनुकृति सिद्धान्त एवं त्रासदी (ट्रजेडी) ।

(vi) लॉजाइनस—उदात्त तत्त्व ।

(vii) कालरिज का कल्पना-सिद्धान्त ।

(viii) क्रोचे का अभिव्यञ्जनावाद ।

(ix) टी. एस. इलियट का काव्य-सम्बन्धी मत ।

अंक विभाजन :

—इसके अन्तर्गत एक प्रश्न ( i ) में निर्दिष्ट विषयों से सम्बन्धित प्रश्न होगा ।

—इसमें क्रम संख्या ( ii ) के अन्तर्गत निर्दिष्ट विषयों से सम्बन्धित एक प्रश्न होगा ।

— इसमें क्रम संख्या ( iii ) में निर्दिष्ट विषयों से सम्बन्धित एक प्रश्न होगा ।

— इसमें एक प्रश्न क्रमांक ( iv ), ( v ), ( vi ) के अन्तर्गत निर्दिष्ट विषयों से सम्बन्धित होगा ।

— इसमें क्रमांक (vii) (viii) तथा (ix) में निर्दिष्ट विषयों से सम्बन्धित एक प्रश्न होगा ।

नोट :—उपरोक्त में से किसी के अन्तर्गत टिप्पणियों का प्रश्न भी हो सकता है ।

सहायक ग्रन्थ :

1. मध्ययुगीन रस-दर्शन और समक लीन युग-बोध — ले० रमेशकुन्तल 'मेघ', प्रकाशक राधा कृष्णप्रकाशन, दिल्ली ।
2. पाश्चात्य काव्य शास्त्र — डा० रामपूजन तिवारी, प्रकाशक राधाकृष्ण प्रकाशन, दिल्ली ।
3. पाश्चात्य काव्य सिद्धान्त डा० शान्तिस्वरूप गुप्त ।
4. पाश्चात्य काव्य सिद्धान्त - डा० गोविन्द त्रिगुणावत ।
5. समीक्षालोक — डा० भागीरथ मिश्र ।
6. भारतीय साहित्य—शास्त्र प्रथम खण्ड आचार्य बलदेव उपाध्याय (प्रकाशक नन्दकिशोर एण्ड सन्स, चौक, वाराणसी) ।
7. भारतीय काव्यशास्त्र, सं० डा० कृष्णवल (राधाकृष्ण प्रकाशन, दिल्ली) ।

(घ) ( ii ) - हिन्दी नाटक का उद्भव और विकास

पूर्णांक 100—समय 3 घंटे

पाठ्य ग्रन्थ :

1. सत्य हरिश्चन्द्र—भारतेन्दु हरिश्चन्द्र
2. स्कन्दगुप्त—जयशंकर 'प्रसाद'
3. मत्स्यगंधा—उदयशंकर भट्ट
4. लहरों के राजहंस—मोहन राकेश

अंक विभाजन :

- |  |    |
|--|----|
| — इस के अन्तर्गत चारों पाठ्य-ग्रन्थों से सम्बन्धित एक-एक प्रश्न होगा । | 36 |
| — इसमें एक प्रश्न 'सत्य हरिश्चन्द्र' से सम्बन्धित (समीक्षात्मक) होगा । | 16 |
| — एक समीक्षात्मक प्रश्न स्कन्दगुप्त से सम्बन्धित होगा ।                | 16 |
| — इसमें 'मत्स्यगंधा' से सम्बन्धित एक प्रश्न होगा ।                     | 16 |
| — इसमें लहरों का राजहंस से सम्बन्धित एक प्रश्न होगा ।                  | 16 |

या

(घ) ( iii ) हिन्दी उपन्यास का उद्भव और विकास

पूर्णांक 100—समय 3 घंटे

इसमें ये पाठ्यग्रन्थ निर्दिष्ट हैं :

1. गोदान प्रेमचन्द्र ।

2. त्यागपत्र—जैनेन्द्र ।
3. वृन्द और समुद्र—अमृतलाल नागर ।
4. कब तक पुकारूँ—रांगेय राघव ।
5. अपने-अपने अजनबी—अज्ञेय ।
6. दिव्या—यशपाल ।

अंक विभाजन

36

इस में चार व्याख्याओं का एक प्रश्न होगा । अवतरणों का चयन इस प्रकार होगा :

एक अवतरण 'गोदान' से

एक अवतरण 'त्याग पत्र' अथवा 'अपने-अपने अजनबी' से ।

एक अवतरण 'वृन्द और समुद्र' से ।

एक अवतरण 'कब तक पुकारूँ' अथवा 'दिव्या' से ।

इसमें 'गोदान' अथवा 'त्यागपत्र' से सम्बन्धित एक प्रश्न होगा ।

16

इसमें 'वृन्द और समुद्र' अथवा 'कब तक पुकारूँ' से सम्बन्धित एक प्रश्न ।

16

इसमें एक प्रश्न 'अपने-अपने अजनबी' अथवा 'दिव्या' से सम्बन्धित होगा ।

16

इसके अन्तर्गत एक प्रश्न 'औपन्यासिक समीक्षा के सिद्धांत' अथवा 'उपन्यास साहित्य का इतिहास' से सम्बन्धित होगा ।

16

या

घ (iv) नया काव्य

पूर्णांक 100—समय 3 घण्टे

इसमें ये पाठ्यग्रन्थ निर्दिष्ट हैं ।

1. उर्वशी—दिनकर ।
2. संसद से सड़क तक—वूमिल ।
3. आत्मजयी—कुंवर नारायण—भारतीय ज्ञानपीठ, वाराणसी ।
4. चांद का मुँह टड़ा—गजानन भावव मुक्तिबोध ।
5. बुनी हुई रस्सी—भवानीप्रसाद मिश्र ।

अंक विभाजन

36

इसमें एक प्रश्न के अन्तर्गत चार व्याख्याएं होगी। एक व्याख्या 'संसद से सड़क तक' या 'आत्मजयी, से होगी शेष पुस्तकों में से प्रत्येक से एक-एक व्याख्येय अवतरण चुना जायेगा।

इसमें एक प्रश्न 'संसद से सड़क तक' से अथवा 'आत्मजयी' से सम्बन्धित।

16

'उर्वशी' से सम्बन्धित एक प्रश्न।

16

चांद का मुंह टेढ़ा' अथवा 'बुनी हुई रस्सी' से सम्बन्धित एक समीक्षात्मक प्रश्न।

16

इसमें एक प्रश्न 'नये काव्य' से सम्बन्धित 'काव्य सिद्धान्त' पर अथवा 'नये काव्य' के इतिहास पर होगा।

16

या

(घ) (v) लोक साहित्य

पूर्णांक 100—समय 3 घंटे

इसमें पांच प्रश्न होंगे—

अंक विभाजन

इसमें एक प्रश्न 'लोक साहित्य ; सामान्य सिद्धान्त' से सम्बन्धित होगा।

20

इसमें एक प्रश्न लोक साहित्य के विविध रूपों अथवा उनमें से किसी एक या अनेक से सम्बन्धित सामान्य समीक्षात्मक अथवा तुलनात्मक प्रश्न अथवा टिप्पणियां।

20

'लोक साहित्य का काव्य' से सम्बन्धित एक प्रश्न।

20

इसमें एक प्रश्न 'लोक साहित्य' के शिल्प से सम्बन्धित होगा।

20

राजस्थानी लोक साहित्य लोक गाथा, लोक गीत लोक नाट्य लोक कथा अथवा लोकोक्तियों से सम्बन्धित एक प्रश्न अथवा टिप्पणियां।

20

सहायक पुस्तकें :—

1. लोक साहित्य विज्ञान—डा० सत्येन्द्र

2 लोक साहित्य सिद्धान्त और अध्ययन—डा० श्रीराम शर्मा

3. राजस्थानी लोक गायान—डा० कृष्णकुमार शर्मा

अष्ठम प्रश्न पत्र निबंध (साहित्यिक विषय पर)

पूर्णांक 100—समय 3 घण्टे

इसके अन्तर्गत किसी एक साहित्यिक विषय पर निबन्ध लिखना होगा।  
मौखिक परीक्षा 100 अंक

अथवा

नवम प्रश्न पत्र

परीक्षार्थियों को मौखिक परीक्षा के स्थान पर एक प्रश्न पत्र में लिखित परीक्षा देनी होगी।

पूर्णांक 100 - समय 3 घण्टे

इस प्रश्न पत्र का पाठ्यक्रम मौखिक परीक्षा के पाठ्यक्रम को अन्तर्निहित करने वाला होगा अर्थात् इसमें उन प्रश्नों के पाठ्यक्रम का संक्षिप्त अन्तर्निवेश होगा जो एम०ए० में पढ़ाये जाते हैं और जिनके ऊपर छात्रों से मौखिक पूछे जाते हैं। इसमें पांच प्रश्न होंगे।

इसमें प्राचीन और मध्यकालीन हिन्दी काव्य से सम्बन्धित एक प्रश्न होगा। 20

इसमें हिन्दी गद्य से सम्बन्धित एक प्रश्न होगा। 20

इसमें हिन्दी पद्य से सम्बन्धित एक प्रश्न होगा। 20

इसमें हिन्दी अलोचना-शास्त्र अथवा हिन्दी साहित्य के इतिहास से सम्बन्धित एक प्रश्न होगा। 20

इसमें एक प्रश्न भाषा विज्ञान से सम्बन्धित होगा। 20

— — —

MINUTES OF THE MEETING OF THE BOARD OF  
STUDIES IN ENGLISH HELD ON THE 10TH  
SEPTEMBER, 1979 IN THE V.C.'s SECRE-  
TARIAT (NEW BUILDING), UNIVER-  
SITY CAMPUS, JAIPUR.

Present :

1. Shri R. C. Joshi ( *Convener* )
2. Shri V. K. Kanjolia
3. Shri A.S. Nadan
4. Shri S.B.L. Rawat
5. Dr. K.L. Sharma
6. Dr. N. M. Sahal
7. Shri M.M. Gupta (Dean, Faculty of Commerce)  
Prof. R.K. Kaul (Special Invitee)

1. Under Section 24E(8) of the University Act, the Board *appointed* Shri R. C. Joshi, Post-Graduate Head in English, R. R. College, Alwar as Convener of the Board for the residue of the term of Shri R. P. Bhatnagar ending on the 27th December, 1979.

2. Under Section 34(4) (iv) of the University Act, the Board *elected* Shri S.B L. Rawat, Lecturer in English, Government College, Sardarshahr as a member, other than the Convener, to serve on the Committee for selection of examiners in the subject for the year 1979-80.

3. The statements of qualifications and teaching experience etc. of teachers received from various sources were revised and panels of examiners were prepared accordingly in terms of S. (25)(2)-(a) by Shri R.C. Joshi and Shri S.B.L. Rawat, who were authorised by the Board to do the needful.

4. The Board could not offer any comments on the reports of examiners and question papers set for the exams. of 1979 as the same were not placed before the Board of Studies.

5. The Board recommended the following changes in the courses of study and text-books in the subject for the examinations as noted below :—

(a) Pre-University Examination, 1982 :

‘Tales from Tagore, (Retold by E.F. Dodd-76 pp) published by the Macmillan Company of India Ltd., priced at Rs. 3.40 be prescribed in place of “Swids Family Robinsons.”

(b) Degree Examinations :

( i ) First Year T.D.C. (Pass) Course Examinations of 1981 & 1982.

General English :

The book “Language Through Literature-Book-2” published by O.U.P. and priced at Rs. 4.50 be prescribed in place of “Understanding English by Harish Pant” and “Kanthapura by Raja Rao”. The division of marks shall be as given below :

- |   |   |          |
|---|---|----------|
| ( I ) A passage from the book<br>to test comprehension                              | — | 40 marks |
| ( II ) An unseen passage to test<br>comprehension (of the<br>standard of the book). | — | 10 marks |

*Note* :—It was pointed out that the book ‘Language Through Literature Book-2’ recommended for Ist Year T.D.C. General English Examinations of 1981 and 1982 was not submitted for consideration of the Board in the year 1978, when the special submission of Books was invited from the Registered publishers in view of the guide-lines prepared by the Board duly approved by the competent bodies of the University.

- |   |   |            |
|---|---|------------|
| (ii) Ist Year T.D.C. English Litt. Examination, 1982. | — | No change. |
| (iii) IInd Year T.D.C. Examination, 1982              | — | No change. |



- (iv) IIIrd Year T.D.C. Examination,  
1982. — No change
- (c) Honours Courses :  
B.A. Hons. Part I, II, III  
English Litt., 1982. — No change.
- (d). Diploma Courses  
Diploma Courses in Linguistics.  
Higher proficiency certificate  
Course and Spoken English  
Course, 1982. — No change
- (e) Post Graduate Examinations :  
M.A. Prev., 1982. — No change  
M.A. Final, 1983. — No change  
except Paper V  
David Thomsons's 'England in the 20th Century  
( Penguin ) to replace A. JP Taylor's 'Eng. Hist.  
1914-1945'.
- (f) M.Phil. (Litt.), 1982.  
( i ) Paper I—No change  
( ii ) Paper II—Modern Critical Theory  
No change except the book '20th  
Century Criticism.' The major state-  
ments by William J. Hardy & Max  
Westbrook be replaced by the book  
'Literary Criticism' Ed. by Lionel  
Trilling.  
The Board also approved the M.Phil. (Litt.)  
Syllabus for 1979 Examination as submitted by the  
Department of English, University of Rajasthan,  
Jaipur. A separate letter in this regard has been  
sent to the University Office.
- (iii) Paper III—20th Century Writing in English Sylvia  
Path—'Ariel' in place of Roy Fuller—  
'Collected Poems'
- (iv) Papers IV & V — No change
- (g) M. Phil (ELT) — No change

(h) The following decisions were also taken unanimously by the Board :—

(I) The question papers for the T.D.C. Ist Year General English Exams. (Main Examinations) in the Faculties of Arts, Science and Commerce be set by different paper-setters.

(II) The board considered the variations between the information given in the Registrar's Circular No. F. 4 (19) Aca. 1/79/1543-610 M dated 18-8-79 and the minutes of the Board of Studies in English dated 7-7-78 regarding the syllabus and division of marks for the Ist Year T.D.C. General English Examination of 1980. The Board resolved that the division of marks as given in the minutes of the Board of Studies in English dated 7-7-78 be circulated to the affiliated colleges as noted below :—

( i ) <i>Comprehension</i>	50 marks
(a) From Text Book I	25 marks
(b) From Text Book II	25 marks
( ii ) <i>Composition</i>	30 marks
(a) Paragraph Writing	15 marks
(b) Letter and Application	15 marks
(iii) <i>Grammar</i>	20 marks
A clarification in this connection be sent to all the Colleges.	

(III) There will be no unseen passage for comprehension. A model paper for Ist Year T.D.C. General English Examinations, 1980 be prepared for circulation by Shri A. S. Nadan.

7. With reference to the Academic Council Res. No. 4A(ii) dated the 15/16th May, 1979 the Board was of the opinion that translation of syllabuses into Hindi was not applicable for the subject of English.

8. With reference to Academic Council Resolution No. 10 dated the 1st June, 1979 and the Syndicate Resolution No. 3 dated the 16th June, 1979, the Board re-arranged the syllabi

consequent upon abolition of unit system in the courses of study already prescribed and approved by the competent University bodies in the manuscripts of 1979 edition of the syllabuses for the Under-graduate and the degree examinations placed before the Board.

9. With reference to Academic Council Res. No. 11 dated the 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979, the Board authorised Prof. R.K. Kaul and Shri R. C. Joshi to make minor 're-adjustments' of the courses of study for the annual scheme of M.A. Previous Exam. of 1981 and Final examination of 1982 consequent upon the abolition of Semester Scheme.

10. It was reported to the Board that the Academic Council vide its Res. No. 14 dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated the 24th Dec., 1978 to that effect that the students of M.A./M.Com. of the Institute be allowed to offer Viva-voce at the M.A./M.Com. Final Examination as given below :—

- (i) The facility of offering Viva-voce permitted to the students of Correspondence Studies for the examinations of 1979, be also extended for the M.A./M. Com. Examinations of 1980.
- (ii) In respect of the matter of allowing candidates to appear at Viva-Voce; the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par, and an option be allowed to all the three categories of candidates in respect of offering Viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper, wherever necessary, be referred to the Board of Studies under the purview of the Faculties where the viva-voce is permissible.

*The Board observed that* an alternative paper to be offered by the students in lieu of Viva-Voce already exists in the syllabi

for the M.A. Final examination in the subject of English and, therefore, no further action is required to be taken.

11. It was reported to the Board that the Academic Council vide its Res. No. 10(i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., 1978 regarding introduction of Viva-Voce in Dissertation for the M.A. Hindi Examination as follows :—

- ( i ) the matter regarding introduction of Viva-voce in Dissertation for M.A. Hindi Examination be referred for consideration of the Board of Studies in Hindi with the observation of the Council that it may consider incorporation of an alternative paper in its place, if necessary.
- ( ii ) A similar reference be also made to the Boards of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the feasibility of abolition by the provision of dissertation and providing an alternative paper in its place, if necessary.

The Board *noted* the aforesaid observations made by the Academic Council.

12. With reference to the Faculty Resolution No. 8 dated the 23rd March, 1979 the Board noted the following Resolution received from the Evaluation Officer, Association of Indian Universities, New Delhi regarding introduction of syllabus for population studies at the Under-graduate level :—

“The Population Policy of the Government of India was welcomed. It was noted that the Agricultural Universities had already recommended that population education be made a compulsory subject for their Under-graduate courses. Resolved that a model syllabus for Population education be prepared and circulated to the Universities of adoption in their Undergraduate curriculum.

*The Board observed* that topics on Population Studies already exist in the courses of study.

13. It was reported to the Board that:—

- (i) while considering the recommendation made by the Board of Studies in English at its meeting held on the 10th Jan., 1979 about the text-books in Gen. Eng. for the First Year T.D.C. Examination. The Faculty of Arts vide its Res. No. 5 (II) (a), dated the 2<sup>nd</sup> March, 1979 *resolved* as under :

“After prolonged discussions the Faculty resolved that the books recommended by the Board be prescribed in the subject of Gen. Eng. for the First Year T.D.C. Examination of 1980 only.”

- (ii) The Academic Council vide its Res. No. 4(II), dated the 1st June, 1979 and the Syndicate vide its Res. No. 3, dated the 16th June, 1979, approved the aforesaid recommendations made by the Faculty of Arts.

*Accordingly, the Board recommended text-books in General English for the First Year T.D.C. Examination of 1981 (See Res. No. 5(b) (i) of these Minutes).*

14. It was reported to the Board that—

- (i) The Academic Council vide its Res. No. 13 dated the 1st June, 1979 appointed a Committee to suggest ways and means for undertaking publications of books in the subjects of General Hindi and General English for the 1st Year T.D.C. Examinations.
- (ii) The meeting of the said Committee was held on 24th July, 1979.
- (iii) The recommendations made by the Committee have been accepted by the Academic Council vide its Res. No. 38 dated 27-28th July, 1979 with the modification that instead of paying royalty to the persons engaged in preparing manuscript of work books as proposed in recommendation No. 4(v) of the Committee, the Vice-Chancellor may consider paying lump sum amount to the person(s) concerned.

Accordingly the Board considered the matter and *observed* that no separate work book is needed in view of the fact that

‘English Through Literature Book—2’ now recommended as a text-book in General English for the First Year T.D.C. Examination of 1981 contains ample exercises.

The meeting ended with a vote of thanks to the chair.

ह० आर. सी. जोशी

Convener,

B.O.S. in English

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN BUSINESS ADMINISTRATION HELD ON THE 10TH  
OCTOBER, 1979 IN THE VICE-CHANCELLOR'S  
SECRETARIAT, UNIVERSITY CAMPUS,  
JAIPUR.

Present :

1. Shri G.N. Sharma (*Convener*)
2. Shri Naurang Lal
3. Shri G. Upadhyay
4. Shri R.N. Thakur
5. Dr. M.B.L. Mathur
6. Dr. R.N. Singh (*Special Invitee*)
7. Shri M.M. Gupta (*Dean*)

(Dr. N.K. Kulasreshtha could not attend the meeting).

1. Under Section 34(4) (iv) of the University Act, the Board *elected* Shri R.N. Thakur, P.G. Head in Business Administration, S.D. Behani College, Sriganganagar as a member other than the Convener of the Board to serve on Committee for Selection of Examiners in the subject for the Year.

2. It was reported to the board that no application containing qualifications and teaching experience etc. of the teachers was received from the University Teaching Departments, University Colleges, Affiliated Institutions and other University for inclusion in the revised panel of examiners. The Board, therefore, *noted* the same and with regard to preparation of the panel of examiners in terms of Statute 25 (2) (a) of the University Hand Book Part II *resolved* that the Principals of all the affiliated colleges in the Faculty of Commerce be requested to send the following information in the subject of Business Administration at an early date for the purpose :

- (a) Name of the teacher
- (b) Academic Qualification

(c) Teaching Experience (Total)

(d) Field of Specialisation

*Further resolved that* a statement showing the details so received be palced before the next meeting of the Board.

3. The Board *offered* no comments on the report of examiners and question papers set for the examination of 197<sup>e</sup>, but observed that the some examiners had not given adequate remarks in their examination reports.

4. The Board *recommended* courses of study and text books in the subject for various examinations of 1981 and 1982 together with the relevant additions and/or alterations to the regulations and ordinances (*vide appendix I*).

5. With reference to the Academic Council Res. No. 11 dated the 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979 the Board felt that no re-arrangements of courses of study for the annual scheme of examination of 1981 applicable for the Previous exam. of 1981 and the Final Exam. of 1982 was required consequent upon the abolition of Semester Scheme of Examination.

6. It was reported to the Board that the Academic Council vide its Res. No. 14 dated the 11th March, 1979 *considered* a proposal received from the Director, Institute of Correspondance Studies and Continuing Education as contained in his letter No. D-3/64 dated 24th Dec., 1978 to the effect that the students for M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final Examination and *resolved that* :

(i) The facility of afferring viva-voce be permitted to the students of correspondance studies from the examination of 1979, be also extended for the M.A./M.Com. Examination of 1980.

(ii) In respect of the matter of allowing candidates to appear in viva-voce the collegiate; the non-collegiate and the students of correspondance institute be treated at par, and option be allowed to all the three catagories



of candidates in respect of offering viva voce or a paper inlieu thereof.

- (iii) The matter for recommending courses of study of an alternative paper wherever necessary be referred to the Board of Studies under the purview of the faculties, where the viva-voce is permissible.

Accordingly the Board *noted* the same and *recommended* the course of study of an alternative paper to be offered by the students in lieu of Viva-voce for the M.Com. Business Administration (Final) Examination of 1980 and onwards. (*Appendix II*)

7. The Board noted the resolution No. 4A(ii) (b) dated 15/16 May, 1979 with regard to translation of the syllabus into Hindi version and *resolved* that the syllabus for the various examinations has already been translated into Hindi in order to get them printed in English as well as in Hindi.

8. The Board *noted* that—

1. The Board vide its res. No. 4 dated 9/10 July, 1979 considered the following proposals made by :

- (a) Dr. H.C. Rara, Lecturer in Accountancy, University Deptt. of Accountancy, Jaipur regarding changes in courses of study and scheme of Examination of Steno Typing in Hindi/English as contained in his letter dated the 4th March, 1979 which was referred to the Board by the Faculty of Commerce vide res. No. 13 dated 17th/18th March, 1979 (*Vide appendix III*)
- (b) Shri P.P. Bhargava, Lecturer, University Depatt. of Business Administration, Jaipur regarding changes in the scheme of Exam. of steno typing as contained in his letter dated 28.11.78. (*vide appendix IV*)

2. The Board *resolved* that the scheme of second year commerce examination in Steno typing be considered at the annual meeting of the Board at the time of consideration of syllabus for the examination of

1982 so as to provide short-hand as well as typewriting subject in Second year T.D.C.

Accordingly the Board considered the whole matter in this light and *resolved* that the necessary amendments have been made in its foregoing resolution No. 4 of these minutes.

9. With reference to the Board of Studies resolution No. 5 dated the 9/10 July, 1979 read with the resolution No. 18 dated the 17/18 March, 1979 of the Faculty of Commerce, the Board considered in the proposals jointly made by Shri A.B.L. Mathur and P.K. Srivastava Lectureres in the University (*appendix V*) *Resolved* that the proposals be not accepted.

10. The Board *considered* the letter dated 30-7-79 received from Shri R.L. Nolakha, Lecturer in Business Adminstration; Shri S.S. Jain Subodh College, Jaipur regarding re-introduction of books written by him with late Shri B.S. Mathur in the syllabus leading to the B. Com. degree (*vide appendix VI*).

The Board observed that the necessary amendments have been made as per foregoing resolution No. 4 of these minutes.

The meeting of the Board ended with a vote of Thanks to the Chair.

Shri G.N. Sharma  
Convener

## APPENDIX—I

(Ref. Res. No. 4 of the Minutes)

(I) Pre-University Examination of 1982 No Change

(II) Diploma Examinations

(a) Diploma in steno-typing (English)  
Examination of 1981 No Change(b) Diploma in steno-typing (Hindi)  
Examination of 1981 No Change

(III) Degree Examinations

(a) First Year T.D.C. (Pass Course) Examination of 1982.  
Add the following book at the Sl. No. 7 in the Books recommended for the paper of Business Organisation on page 16 of the syllabus 1978 Ed.7. व्यावसायिक संगठन—माथुर एवं नीलखा  
(आदर्श प्रकाशक, जयपुर 1979-80)(b) Second Year T.D.C. (Pass Course) Examination of 1982.  
Add the following books at the following serials.  
under the heading 'Books recommended' for the following papers on the pages shown as below :

S.N.	Name of the Books	Paper
7.	व्यापारिक सन्धियम, माथुर एवं सक्सेना रमेश टुक डिपो, जयपुर 1979	II. Business Law (P. 9 of 78ed. Syllabus)
7.	औद्योगिक सम्बन्ध, माथुर एवं नीलखा, रमेश टुक डिपो जयपुर. 1978-79	I. Industrial Re- lations P. 12 of 1978 ed. of syllabus

Under optional subjects : 5. Stenotyping (P. 14 of 1978 ed.  
Syllabus)

The existing scheme and syllabus for the examination of Stenotyping be substituted as follows :

Scheme of Steno-typing paper Hindi/English in II Year  
T.D.C. Commerce Examination, 1982 (Pass Course)One Paper Total duration One Hour Maximum Pass Marks 100  
Minimum Pass Marks 36

The paper shall be divided into two parts as under :

Part I—Shorthand in Hindi/English 1/2 Hr. duration 50 Marks

Part II—Typewriting Hindi English 1/2 Hr. duration 50 Marks

*Syllabus :*

**Part A—Shorthand in English/Hindi**

1/2 Hour

50 Marks

Writing in Shorthand from a passage dictated at the speed of 80 words per minute for a period of 5 minutes and to be transcribed directly on the typewriter within the remaining 25 minutes. An interval of extra 5 minutes will be provided to the candidates between dictation and transcription.

**Part B—Typewriting Hindi/English**

1/2 Hour

50 Marks

Speed in English Typewriting

40 words per minute

Speed in Hindi Typewriting

30 words per minute

(a) Typecopying from a passage with corrections in proof reading.

(b) Tabular statement.

*Note :—*The examination of Part I and Part II of this paper shall be conducted separately.

(c) Third Year T.D.C. (Pass Course) Course Examination of 1982.

Add the following books in the following papers under the heading 'Books recommended' at the serials shown below :

S.N. Name of Book

Paper

10. Dr. B.S. Mathur—Principal of management (National 1976)

II—Elements of Management, page 9 of the 1975 Ed. of syllabus.

11. Mathur Nolakha—Prabandha ke Tatva (National) New Delhi 1978 (in Hindi).

”

**(IV) Honours Examinations**

(a) Part I Examination of 1982.

No Change

(b) Part II Examination of 1982.

Add the following Book under the heading of Books recommended for the Hons. Paper IV Principal of Management on page 23 of the 1978 ed. of the syllabus.

5. Principals of Management by Dr. B.S. Mathur  
(National, New Delhi 1976).

(c) Part III Examination of 1982.

No Change

(V) Post-graduate Examinations

(a) M.Com. (Previous) Examination of 1982.

Under compulsory papers :

Paper II—Marketing Management (P. 5 of 1978 ed. of syllabus)

Add the following book

14. Vipanan Prabandh—J.N. Shagal : Hindi Granth Akademi, Jaipur Rs 20.00

Paper III—Government Society and Business (P. 6 of 1978 ed. of syllabus)

Add the following Books

10. Udyog Ka Niyantran—Robertson & Dennision  
(in Hindi) Translated by L.N. Nathuramka & Noornabi Abbasi,  
(Raj. Hindi Granth Akademi, Jaipur Rs. 5.50/-)

Paper IV—Managerial Economics and Managements Accountancy (p. 8 of 1978 ed. of syllabus)

Add the following book :

27. Prabandhkiya lekhan—J.K. Agarwal and R.K. Agarwal (Remesh Book Depot, Jaipur Rs. 42.00)

(b) M.Com. (Final) Examination of 1982.

Under optional papers

Group I—Management of Special Institutions :

Paper I—Management of Co-operative Institutions  
(P. 10 of the 1978 ed. of the syllabs)

Add the following book under the heading

*Books recommended :*

6. Co-operation in India—Dr. B.S. Mathur (Sahitya Bhavan Agra, 1977)

(c) M.B.A. First Year Examination, 1981

*Group II—Human Area :*

Paper I—Personnel Mangament and Induatrial Relations  
(P. 16 of the 1978 ed. of the syllabus)

Add the following book under the heading

*Books recommended :*

12. Karmik Prabandh—C.H. Northcoat (Rajasthan  
(in Hindi) Hindi Granth Academi, Jaipur  
Rs. 20.00)

Paper II—Labour Legislation and Society Security  
(P. 18 of the 1978 ed. of the syllabus)

Add the following book under the heading

*Books recommended :*

13. Bhartiya Sramikvarga—J.S. Mathur (Raj. Hindi  
Andolan (in Hindi) Granth Akademi, Jaipur  
Rs. 20.00)

*Group III—Marketing Area :*

Paper I—Foreign Trade Management (P. 21 of the 78  
ed. of syllabus)

Add the following book under the heading

*Books recommended :*

11. Bhartiya Vyapapr aur—Dr. A.K. Singh (Raj. Hindi  
Bhartiya Vyapar neeti Granth Academi, Jaipur  
(in Hindi) for Library ed. Rs. 13.00  
and for student ed. Rs.  
9.00)

Paper 5. Quantitative Techniques and Production  
Management (P. 11 of 1979 ed. of syllabus)

Add the following book at Sl. No. 4 under the heading

*Books recommended :*

4. Quantitative Techniques—C.R. Kothari (Vikas  
Publication House, New  
Delhi).

M.B.A. Second Year Examination, 1982 No Change

(d) M. Phil. Examination of 1982. No Change

## APPENDIX—II

(Ref. Res. No. 6 of the minutes)

M. Com. (Final) Examination, 1980 and onwards

Paper to be offered in lieu of Viva Voce

Paper—Essay and Comments

*Note* :—This paper shall be offered only by those candidates who obtain less than 50% marks in the aggregate at the M.Com. Previous Examination and who do not offer Viva Voce.

Candidates who obtain 50% marks in aggregate at the M.Com. Previous Examination may if they so like can offer viva voce at the M.Com. Final Examination.

*Syllabus* :—

The paper will consist of two parts.

## Part (A) Essay

Marks 50

Candidates will be required to write an essay (about 600 words) on one out of the three topics to be given in the question paper from the following list :

1. Consumerism.
2. Management by objectives.
3. Theories of Motivation.
4. Control of Monopoly and Restrictive Trade Practice in India.
5. Organisation and Management of Public Enterprises in India.
6. Industrial Democracy.

## Part (B) Comments

Candidates will be required to write a comment (about 600 words) on any one of the following six books.

1. Control of Industry by Robertson & Dennison translated by L. N. Nathuramka and Noor Nabi Abbassi (Publisher-Social Sciences Hindi Creative Centre, Univ of Raj., Jaipur 1967 ed. Rs. 5.50)  
( in English )  
Udyog ka Niyantran  
( in Hindi )
2. Personnel Management by C. H. Northcote, Published by Rajasthan Hindi Granth Akademi, Jaipur.  
( in English )  
Karmik Prabandh  
( in Hindi ) Rs. 29.00

3. Indian working Class Movement  
( in English )  
Bhartiya Sramikvarg  
Andolan ( in Hindi )  
by J. S. Mathur Published by  
Raj. Hindi Granth Akademi,  
Jaipur Rs. 20.00.
4. Wages (in English)  
Majdoori ( In Hindi )  
by Maurice Dob translated by  
Om Prakash-Published by  
Social Sciences Hindi Creative  
Centre, Univ. of Raj, Jaipur  
Rs. 5.00.
5. The Practice of Management by Peter F. Drucker  
( in English )
6. Future Shock  
by Elvin Tofflar.



## APPENDIX—III

(Ref. Res. No. 8 (1) of the minutes)

हरक चन्द रारा,

बी. 43, तिलकनगर,

लेखाशास्त्र व्याख्याता

जयपुर-302004

4 मार्च, 1979

कुलसचिव जी,

राजस्थान विश्वविद्यालय जयपुर।

द्वारा : अविष्ठाताजी, वाणिज्य संकाय।

विषय :—शीघ्र लिपि (हिन्दी-अंग्रेजी) विषय को लोकप्रिय बनाने के लिए बी. काम. (पास) पाठ्यक्रम में परिवर्तन।

प्रिय महाशय,

वाणिज्य संकाय की 17 मार्च, 1979 को आयोजित होने वाली बैठक की कार्यसूची क्रमांक 8 के अनुसार शिक्षा को कार्यान्मुख बनाने पर विचार किया जाना है।

इस संदर्भ में लेख है कि त्रि-वर्षीय द्वितीय पाठ्यक्रम प्रारम्भ होने के पूर्व इन्टर वाणिज्य के छात्रों में शीघ्रलिपि विषय वृद्ध लोकप्रिय था और वाणिज्य के छात्रों को स्टेनोग्राफर के पदों पर नियुक्तियाँ मिलने के अच्छे अवसर रहते थे। इस पाठ्यक्रम के प्रारम्भ होने के पश्चात् धीरे धीरे शीघ्रलिपि विषय की मांग कम होती गई और अब इस विषय के अध्यापन की व्यवस्था कुछ ही महाविद्यालयों में है और वहाँ भी इस विषय को लेने वाले छात्रों की संख्या वृद्ध कम है, जबकि राज्य में हिन्दी अंग्रेजी के अच्छे स्टेनोग्राफर की मांग काफी है।

हायर सैकण्डरी परीक्षा उत्तीर्ण कर जो छात्र बी.काम. (पास) पाठ्यक्रम में प्रवेश लेते हैं उनमें से कई छात्र हायर सैकण्डरी परीक्षा के लिए शीघ्रलिपि या दोनों टाइप ऐन्ड्रिक विषय के रूप में अध्ययन किये होते हैं, अतएव यदि शीघ्रलिपि विषय के अध्यापन की व्यवस्था प्रथम वर्ष से ही कर दी जावे तो इस विषय की मांग बढ़ जावेगी। परीक्षा इस ऐन्ड्रिक विषय के लेने वालों की केवल द्वितीय वर्ष के अन्त में ली जावे, अंग्रेजी में गति प्रति मिनट 100 शब्द से घटाकर 80 शब्द कर दी जावे और टाइप का कोई पत्र अलग से न हो डिक्टेशन को टाइप करने की अनिवार्यता हो और पत्र शीघ्रलिपि का ही 200 अंकों का रखा जावे।

भवदीय

हरक चन्द रारा

## APPENDIX—IV

*(Ref. Res. No. 8 (2) of the minutes)*

Preim Prakash,  
Department of  
Business Administration,  
University of Rajasthan,

November 28, 1978.

Dear Sir,

We have been teaching Hindi/English Steno-typing in undergraduate classes for more than 20 years, but no notice has so far been taken of change in the need of the society and employment opportunities. Consequently, on the one hand, there is dearth of efficient steno-graphers and demand of the day in spite of having made heavy investments on the teaching of the subject. Keeping in view my association with the subject as a teacher and also as an examiner at different levels e.g. examinations and recruitments test being conducted by Public Service Commissions, Board of Technical Education, Rajasthan, Ministry of Labour—Government of India, Government, Semi-Government and private organisation, I am enclosing herewith a proposed scheme for effective and employment-oriented teaching of the subject. Since, this proposed scheme is a departure from traditional approach, it is bound to have actions and reaction, but I am sure this will be taken in spirit and latter and implemented with modifications, if required, from the ensuing session 1978-79.

With regards,

Yours truly,  
(P.P. Bhargava)

Shri V.D. Qamra.  
Registrar,  
University of Rajasthan,  
Jaipur.

**Section B :—Type Theory**

Max. Marks : 20

Duration : 2 hours

Syllabus :

Based on present course  
contents.**Third Year T D.C.****Paper—I—(may be termed as paper A)****Shorthand :**

Max. Marks :

50

Speed :

100 w.p.m.

Transcription

Direct on Typewriter

Duration :

1 hours (excluding dictation period)

One passage of 6 mts. duration  
containing 60 words.**Paper—II—(May be termed as Paper B)****Section A :—Type Practice (With Proof corrections)**

Max. Marks :

30

One passage

20 Marks

One tabulation

10 Marks

Duration :

30 Mts.

**Section B :—Mechanism of Typewriting**

Max. Marks :

20

(P.P. Bhargava)

## APPENDIX—V

(Ref. item No. 9 of the minutes)

### B.Com. (Hons.) Part III

Hons. Paper V—*Marketing Research*.

#### UNITS :

1. *Introduction* : Meaning, Evolving definitions, Nature and scope of marketing, Importance, of marketing.
2. *Product/Planning* : Style and design, New uses, Colour, Distinctive features. Classification of products, Brand and Trade marks, Packaging, Labelling, Product-mix and Product-line policy (Simplification, Standardisation and diversification), Guarantee (Warranty) and Service.
3. *Marketing Research* : Meaning of Sales Research, Market Research and Marketing Research Importance of marketing research. Areas of marketing research. Techniques of marketing research.
4. *Planning Outlets* : Various channels, Selecting the channels of distribution.
5. *Pricing* : Levels and policies, Break-Even Points, Factors influencing pricing. Price maintenance, Selling terms and conditions—Discount credit, etc.
6. *Planning Markets and Sales* : Questions of terminology. Potential, Forecast, Market potential, Sales quota, Market Forecast, Sales forecast, Market Index, Market factors. Uses of Sales forecast Sales forecasting procedure. Sales forecasting methods.
7. *Promotion Mix*—Determining the promotion programme : Personal selling, Prospecting, Sales resistance, closing the sale, characteristics of successful salesman. Advertising, Media choice, Good copy, Timing, Budgeting, Sales promotion.
8. *Management of sales Personnel* Recruitment and selection. Training, Equipment. Motivation, Compensation. Supervision, Controlling salesmen.
9. *Rural Marketing* : The product. The pricing strategy. The promotion techniques. The physical distribution.

*Note* : The Paper is to be taught with Indian examples.

#### *Books Recommended :*

1. Lazo and Corbin : Management in Marketing.

5. Johnson, Lewis K. : Sales and Marketing Management-Text and Cases.
6. Kelley, E.J. and Lazer, W (eds.) : Managerial Marketing : Perspectives and Viewpoints.
7. May , H.H., and Nolen, H.C. : Sales Management.
8. Nystrom, Paul H. (ed.) : Marketing Hand-book.
9. Phelps, D.M.. : Sales Management-Policies and Procedures.
10. Phelps, D.M. and Weating., J.H. : Marketing Management.
11. Still, R.R., and Coundiff, E.W. : Sales Management : Decision, Policies and Cases.
12. Tosdal, H.R. : Introduction to Sales Management.
13. Davar, R.S. : Modern Marketing Management in the Indian Context.
14. Latif, T.A.A. : Marketing Management in the Developing Countries.
15. Neelamegham. S. (ed.) : Marketing Management and the Indian Economy.
16. Mehta, Subhas C. : Indian Consumer.
17. N.C.A.E.R. : New Perspective in Marketing.
18. Kotler, Philip : Marketing Management.
19. कंसल, बी.बी. : विपणन प्रवन्ध ।
20. सहगल जगमोहन : विपणन प्रवन्ध ।
21. अग्रवाल एवं कोठारी : विपणन प्रवन्ध ।
22. जैन, एस.सी. : विपणन प्रवन्ध ।

*Journals :*

1. Journal of Marketing, USA.
2. Harvard Business Review.
3. Sales Management USA.
4. Industrial Tiems.
5. Management Perspectives.
6. Indian Management.

## M. Com. (Business Administration)

*Marketing Research : Part "A"*

## Units

1. Definition and Nature of Marketing Research.
2. The purpose and importance of marketing research.
3. Organisation of Marketing Research.
4. Applications of Marketing Research.
5. Basic Marketing Research methods.
6. Specialised Techniques of Marketing Research.
7. Quantitative market analysis (Market factors and market index method).
8. Motivational Research.
9. Advertising Research.

*Marketing Research Part "B"*

## Units

1. Planning the procedure.
2. Internal business records and their uses.
3. External Research.
4. Sample theory-selecting the sample.
5. Questionnaire designing-collection of data.
6. Tabulation of Data.
7. Analysis and Interpretation of data.
8. Report writing.
9. Application or Follow up.

*Books recommended :*

1. Brown, L.O. : Marketing and Distribution Research.
2. Crisp, R.D. : Marketing Research.
3. Bradford, E.S. : Marketing Research.
4. Delens, A.H.R. : Principles of Market Research.
5. Luck, Wales, and Taylor : Marketing Research :

## APPENDIX-VI

*(Ref. Res. No. 10 of the minutes)*

Dr. Ratan Lal Nolakha  
M.Com. Ph.D.  
Lecturer in Business Administration

Tel. College : 72989  
S.S. Jain Subodh College,  
Jaipur—302004.  
30-7-79

The Registrar,  
University of Rajasthan,  
Jaipur.

*Sub* :—Deletion of my books in the syllabus leading to the B.Com. degree.

Dear Sir,

With reference to the above cited subject I submit that my following books (in coauthorship of Dr. B.S. Mathur) were prescribed in the syllabus upto the session 19-6-77 ;

1. Business Organisation (Hindi) for I Yr. T.D.C. Commerce.
2. Business Communication and Salesmanship (Hindi) for II Yr. T.D.C. Com. First Paper.
3. Industrial Relation (Hindi) for II Yr. T.D.C. Com. Optional Paper.

However some time during 1977 Dr. B.S. Mathur was elected as a member of the Board of Studies and as a result books were deleted from the syllabus. I made a contact to the concerned office superintendent and requested him not to delete the names of the books in the syllabus. He replied that it is in tune with the existing practice and rule of the university. But to my mind the rule does not say so. The section 42 of the University Handbook reads as under "No book written or published by any person who is the member of a Board of Studies of the University shall be prescribed or recommended for study for any examination of the University so long as such person remains a member of the Board."

This is the evident from the simple observation of the section that the books written by a member of the Board of Studies can be prescribed but at the same logic behind the rule seems to be that the member sitting on the Board of Studies may influence the Board and got his books recommended even if they are sub standard. But books which have already been recommended before author's membership on the Board of Studies the question of undue influence does not arise. Hence I request you Kindly to look into the matter and re-incorporate the names of the above books in the syllabus.

Thanking you

Yours truly  
Sd/- R.L. Nolakha

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN GEOLOGY HELD ON 15-10-1979 AT 12.00 NOON  
IN THE VICE-CHANCELLOR'S SECRETARIAT,  
NEW BUILDING, UNIVERSITY  
CAMPUS, JAIPUR.

Present :

1. Dr. B.L. Sharma ( *Chairman* )
2. Dr. M.K. Pandya
3. Shri N.C. Jain
4. Dr. R.K. Srivastava
5. Prof. V.K. Verma.

1. The Board unanimously *elected* Dr. B.L. Sharma as Chairman in absence of the Convener, B.O.S. in Geology.

2. Under Section 34 (4) (iv) of the University Act, Dr. B.L. Sharma, Reader and Head of the University Department of Geology, Udaipur was unanimously elected as a member, other than the Convener, to serve as a member on the committee for selection of Examiners in the subject for the year 1979-80.

3. The Board *scrutinized* the statements of qualifications and teaching experience etc of teachers received from the University teaching departments, University colleges, affiliated Institutions and other Universities and *revised* panel of examiners in terms of S. (25) (2) (a).

4. The Board *offered* no comments on the reports of examiners and question papers set for the examinations of 1979.

5. The Board *recommended* courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances :—

I. Degree Examination :

- (a) First Year T.D.C. (Pass) Course Examination, 1982.



- (b) Second Year T.D.C. (Pass) Course Examination, 1982.
- (c) Third Year T.D.C. (Pass) Course Examination, 1982.

## II. Honours Examination :

- (a) Part I Examination of 1982.
- (b) Part II Examination of 1982.
- (c) Part III Examination of 1982.

## III. Post Graduate Examination :

- (a) Previous Examination of 1982.
- (b) Final (Annual) Examination of 1983.

## IV. M.Phil. Examination, 1982.

The Board after careful deliberations *resolved* that the courses of study, text books and scheme of examinations for the post graduate examinations as recommended in the meeting of 4-9-79 be repeated for the M.Sc. (Pre) examination of 1982. and M.Sc. (Final) examination of 1983 and M.Sc. Tech. Applied Geology Exam. of 1982. For the B.Sc. Hons. re-arrangements of papers be made as appendix-I and for under-graduate examinations no change was recommended except that for practical examinations marks for records as in other subjects be re-introduced.

6. The Board *noted the* resolution passed by the Academic Council vide its Res. No. 4A (ii) dated 15/16th May, 1979 regarding translation of the Syllabuses for the various examinations in the Subject into Hindi version.

*Resolved to recommend* that efforts be made by the Board to translate the Syllabuses into Hindi version.

The meeting ended with a vote of thanks to the Chair.

B.L. Sharma  
Chairman,  
B.O.S. in Geology

## APPENDIX—I

*Syllabus*—Unchanged.

**Geology Hons. I (Main) :**

- Paper I—Physical Geology, Geomorphology and Geodynamics.  
Paper II—Crystallography and Mineralogy.

**Geology Hons. II (Main) :**

- Paper III—Petrology (Previously it was paper V).  
Paper IV—Paleontology (Previously it was paper II).

**Geology Hons. III (Main) :**

- Paper V—Structural Geology (Previously it was paper IV).  
Paper VI—Economic Geology.  
Paper VII—Stratigraphy and Geology of India.  
Paper VIII—Applied Geology.  
Paper—III will be designated as paper II.

Marks for record etc for all the classes i.e. B.Sc. pass course and Hons. be restored as in other subjects.

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• MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN MUSIC HELD ON THE 30TH/31ST OCTOBER.  
1979 IN THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. (Mrs) Sudha Srivastava ( *Convener* )
2. Shri R.D. Varma
3. (Mrs.) Kameshwari Mathur
4. Shri G.N. Rajurkar
5. (Mrs.) Nirmala Saxena.

*Note* :—Shri P.N. Chinchore could not attend the meeting.

1. Under Section 34(4)(iv) of the University Act, the Board *elected* Shri R.D. Varma, Lecturer in Music, Banasthali Vidyapeeth, Banasthali as a *member*, other than the Convener of the Board of Studies, to serve on the Committee for Selection of Examiners in the Subject for the year.

2. The Board *scrutinized* the statements of qualifications and teaching experience etc. of teachers recieved from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised penal of examiners and prepared panels of examiners in terms S. (25)(2)(a).

3. The reports were placed on the table. The Board observed that most of the examiners have not commented on the standard of the examinations. The Board further observed that according to the syllabus the students cannot offer Tabla. In future such candidates should not be allowed. The Board could not offer any comments on the question papers as the same were not placed before the Board.

4. The Board *recommended* no change in courses of study and Text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances :—

( i ) Pre-University Examinations of 1982.

(ii) *Degree Examinations :*

- (a) First Year T.D.C. (Pass) Course Examination of 1982.
- (b) Second Year T.D.C. (Pass) Course Examination of 1982.
- (c) Third Year T.D.C. (Pass) Course Examination of 1982.

(iii) *Honours Examinations :*

- (i) Part I Exam. of 1982.
- (ii) Part II Exam. of 1982.
- (iii) Part III Exam. of 1982.

(iv) *Post-graduate Examinations :—*

- (a) Previous Examination of 1982.
- (b) Final Examination of 1983.
- (v) M.Phil. Examination of 1982.

The Board *resolved to recommend* that *M.Phil* courses may be prepared and appointed the following Committee to prepare the M.Phil. Course in Music to be placed before the next meeting of the B.O.S. in Music :—

- 1. (Mrs.) Sudha Srivastava (Convener)
- 2. Shri G.N. Rajurkar
- 3. Shri R.D. Varma

5. With reference to Ac. Council Res. No. 4A(ii) dated the 15/16th May, 1979, the Board *translated* the Syllabus into Hindi version upto Degree level in order to get them printed in English as well as Hindi versions. However, the P.G. Syllabi will be translated into Hindi version in the next meeting of the Board of Studies.

6. With reference to Academic Council Resolution No. 13 dated the 1st June, 1979 and the Syndicate Res. No. 3 dated 16th June, 1979 the Board *revised* the syllabi consequent upon abolition of Unit System under the aforesaid resolution and re-arranged the Courses of study already prescribed and approved by competent University bodies applicable to 1981 examinations.

7. With reference to Ac. Council Res. No. 11, dated the 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979

the Board consequent upon the abolition of Semester Scheme of Examination, made minor re-adjustments of courses of study in the Annual Scheme of Examinations of 1981 on the basis of the courses prescribed for the Semester Exams. in the M.S.S. of 1979 edition of the Syllabus applicable for the Previous Examination of 1981 and Final Examination of 1982.

8. *It was noted that* the Ac. Council vide its Res. No. 14, dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/63 dated the 24th Dec., 1978 to that effect that the students of M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final Examination and *resolved* that :—

- (i) The facility of offering viva-voce be permitted to the students of Correspondence Studies for the examination of 1979 be also extended to the students of the M.A./M.Com. Exam. of 1980.
- (ii) In respect of the matter of allowing candidates to appear viva-voce; the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par and an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper inlieu there of.
- (iii) The matter for recommending courses of study of an alternative paper, wherever necessary, be referred to the Board of Studies under the purview of the Faculties where the viva-voce is permissible.

9. *It was noted that* the Ac. Council vide its Res. No. 10(i) dated the 11 March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., '978 reg. introduction of viva-voce in Dissertation for the M.A. Hindi Examination; and *resolved* as as follows :—

- (i) The matter regarding introduction of viva-voce in Dissertation for M.A. Hindi Examination be referred for consideration to the Board of Studies in Hindi with

the observation of the Council that it may consider abolition of the provision of dissertation at the M.A. Hindi Exam. and if so, it may consider introduction of an alternative paper in its place, if necessary.

- (ii) A similar reference be also made to the Board of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the feasibility of abolition of the provision of dissertation and providing an alternative paper in its place, if necessary.

10. The Board unanimously *resolved to recommend* with permission of the Chair that Sangit Praveen degree of A.B.G.M.V. Mandal cannot be equated with that of Ph.D. Degree of the University, because the 'Sangit Praveen Degree' consists of practical plus dissertation work which is not even of the present dissertation work of M.A. standard, while the degree of Ph.D. is a full fledged research work of University standard.

The meeting ended with a vote of thanks to the Chair.

*Sd/- Mrs. Sudha Srivastava*  
*Convener,*  
Board of Studies in Music.

MINUTES OF THE MEETING OF THE ADHOC  
COMMITTEE OF COURSES IN JOURNALISM  
HELD ON 25TH OCT., 1979 AT 12.00 NOON  
IN THE V.C'S. SECRETARIAT, UNIVERSITY  
CAMPUS, JAIPUR.

Present :

1. Dr. P.D. Sharma (*Convener*)
2. Shri K.L. Kochar
3. Shri Dinesh Khare
4. Prof. L.N. Gokhale
5. Shri B.B. Bhatnagar
6. Shri S.C. Hada (*Special invitee*)
7. Shri Bhanwar Surana (*Special invitee*)

1. The Committee scrutinised eligibility in the panel of examiners, teaching experience of teachers, received from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities and revised panel of examiners in terms S. (25) (2) (a).

2. The committee could not offer any comments on the reports of examiners and standard of question papers because the same were not placed before the committee. However, Shri Bhanwar Surana apprised the committee that there were no complaints from the examinees and the examiners were satisfied with the performance of the candidates.

3. The committee *recommended* the courses of study for the Post Graduate Diploma Course in Journalism examination of 1982 (vide Appendix I).

*The committee further resolved to recommend that these courses be also adopted from the said examination of 1981.*

4. It was unanimously decided that viva-voce of 100 marks should be added as a compulsory paper to the new syllabus.

5. The committee further *resolved to recommend* that practical work in paper Nos. III, IV, V and VI should be prescribed in advance and written assignments of 10 pages each in 4 papers should be evaluated by examiners. half of whom should be externals.

6. It was consensus that the academic standard of the Post-graduate Diploma course in journalism was not upto the mark and syllabi revision should be taken up seriously on a continuing basis. For this the committee *appointed* a following sub-committee to scrutinise details :—

1. Dr. P.D. Sharma (*Convener*)
2. Shri Bhanwar Surana
3. Shri K.L. Kochar
4. Shri S.C. Hada

The meeting ended with a vote of thanks to the Chair.

Sd/- P.D. Sharma  
*Convener,*  
Adhoc Committee of Courses  
in Journalism



( *Ref. Res. No. 3 of the minutes* )

## APPENDIX—I

## Post-graduate Diploma Course in Journalism

1. Paper—I History, Principles and Laws of the Press.
2. Paper—II Current Affairs and Newspaper Management.
3. Paper—III News Reporting, Feature Writing and Photo-journalism.
4. Paper—IV Editing, Sub-editing, Graphics and Printing.
5. Paper—V Public Relations, Development Journalism & Advertising.
6. Paper—VI Radio, TV Film Journalism and Mass Communications.
7. Paper—VII Viva-Voce.

## Post-Graduate Diploma Course in Journalism

The Post-Graduate Diploma Course in Journalism shall be a course of ONE YEAR duration. The medium of instruction and examination shall be Hindi.

## Detailed Syllabus

The following shall be the syllabus for the Post-Graduate Diploma Course in Journalism Examination :

Paper—I—History, Principles and Laws of the Press.

3 hours duration

100 Marks.

**History :—**Evolution of journalism. Growth of the Indian Press and News Agencies; Prominent newspapers and stalwart journalists; Major recommendations of the two Press Commission; Inquiry Committee on Small Newspapers. Organisations of journalists in India; Press Council of India; Report of the Fact finding Committee on Newspaper Economics.

**Principal :—**Nature of journalism, Purposes, Responsibilities and criticism of journalism; Freedom of the Press; Code of conduct for the Press; Press as an industry and as public service; Understanding public taste; average reader and his interest; Journalism and literature; Journalism as a vocation.

**Laws :—**The Indian Copyright Act of 1957; The Law of Libel and Slander including Defamation as contained in the Indian

Penal Code; The Press Council Act of 1978. The Contempt of Parliament; The Press and Registration of Books Act of 1867; The Working Journalists (conditions of Service and Miscellaneous Provisions) Act of 1955; The Working Journalists (Fixation of rates of Wages) Act of 1958; The Prize Competition Act of 1955; The Drugs and Magic Remedies (Objectionable advertisements) Act of 1954; The Indian Official Secrets Act of 1923; The Young Persons (Harmful Publication) Acts of 1933 and 1963; Freedom of speech and expression as enunciated in the Indian Constitution; The Newspaper Price and Page Case.

### *Books Recommended :*

#### **History :—**

1. A History of Press in India—Natrajan S. (Asia Publishing House, London).
2. History of Indian Journalism—Natrajan J. Part-II of the Report of the Press Commission (Publication Division, Government of India).
3. Indian Journalism—Murthy N. K. (Prasaranga, University of Mysore, Mysore).
4. Report of the Press Commission : Part—I.
5. Press in India—Chalpathi Rau.

#### **Principles :—**

1. New Survey of Journalism—Mott and others (College outline series-Barnes and Noble, Inc. USA).
2. An Introduction to Journalism—Bond, F. F. (The Macmillan Co., New York).
3. The Practice of Journalism Edited by Dodge J. and Viner G. (Heinemann, London).
4. Mansfield's Complete Journalist—Mansfield F.J. (Sir Issac Pitman and Sons Ltd., London).

#### **Laws :—**

1. Journalist and the Law—Umrigar K. D. (Law Book Co., Allahabad).
2. The Press and the Law (The Press Institute of India)
3. Law of Literary and Dramatic Copyright in a Nutshell—Dadachanji.
4. The Contempt of Court under the Construction—Ramchandran V.G. and Gopalan V.R. (Eastern Book Co., Lucknow).
5. The Law of Sedition in India : Indian Law Institute.

**Paper—II—Current-Affairs and Newspaper Management.**

3 hours duration

100 Marks.

- (a) **Current Affairs** :—A systematic study of the basic issues that underlie the stream of contemporary news and history : A review of major events vis-a-vis local, regional, national and international scene.
- (b) **Newspaper Management** :—Principles; Newspaper as an industry, how it differs from other industries; Problems of the newspaper as business enterprise; Objectives and policies of the management; Departmental inter-relation; Planning for personnel development; Management Practices; Functions of management (a) Organization (b) Structures and Procedures; Circulation: Sales-Forecasting and Planning-Planning for growth; Market and readership surveys; classification of sales for sales promotion-permanent, casual, sales through agents, subscription sales; Press Registrar's report; Transportation and accounts. Keeping of records for the Audit Bureau of Circulation; Rules of accreditation; Newspaper enquiry committees; Newsprint policy of the Government.

*Books Recommended :*

**(a) Current Affairs : Reference Material :**

1. India Annual
2. The Times of India Directory
3. Asian Recorder
4. African Recorder
5. Economic Aspects of the Indian Press; Ashok Desai

**(b) Newspaper Management :—**

1. Newspaper Organization and Management—Rucker F.W. and Williams H. L. ( The Iowa State University Press, Ames, Iowa).
2. Newspaper Management—Goulden J. (Heinamann, London).
3. Newspaper Circulation; What, Where and How—Rucker F.W. (The Iowa State University Press, Ames, Iowa).
4. Circulation Problems in Indian Newspaper—Lingam T. N.M. (Press Institute of India).
5. Promoting the Total Newspaper—Shover William R. ( Editor ) ( International Newspaper promotion Association).

**Paper—III—News Reporting, Feature Writing and Photo Journalism.**

3 hours durations

100 Marks

**News Reporting** :—Distinction between literary and newspaper writing; Development of the concept of reporting; Definition of news; Qualities of news and qualifications of a reporter; News story structure; covering the courts; Covering crime; Covering public meetings and speeches; Covering Government—from Panchayat to Parliament level; Covering legislature; Covering society and social and problems; Covering the unexpected. Covering Weather and Farm news; Keeping pace with science and technology; Modes of reporting; Sectional reporting; Ethics of reporting; Rights and responsibilities of a reporter; Attending Press Conferences; Inter-Office relationship between reporter and other members of the staff.

**Feature Writing** :—Definition of feature: The feature interview; The made feature; The colour story. Newspaper's feature sections: Science, religion, labour, education; The columnist—his role; Guidelines for clumnists. How to wirte a feature and how not write it; How to plan a feature; How to find subject and materral for a feature.

**Photojournalism** :—Light as a Language; Medium of photographic communication; Types of news pictures; Picture reproduction process; Briefing the cameraman; Picture selection; picture editing, Picture story; Captions and Titles.

***Books Recommended :*****News Reporting :—**

- (a) Modern News Reporting—Warren C. (Harper and Row, New York).
2. Newsmen at Work—Campbell L.R. and Wolseley R.E. (Houghton Mifflin Co., Boston).
3. How to Report and Write the News—Campbell L.R. and Wolseley R.E. (Prentice—Hall, USA).
4. The Complete Reporter—Johnson S. and Harriss J. (The Macmillan Co., New York).
5. Interpretative Reporting Macdougall C.D. (The Macmillan Co., New York).
6. Scholastic Journalism—English Earl and Hach Clarence (The Iowa State University Press Ames. Iowa, USA).
7. Fundamentals of Journalism—Crump Spencer (McGraw Hill Book Co., New York).
8. Reporterial Writing—Schehan Paul V. (Chilton Book Co., N.Y.).

9. Reporting for the Print Media—Fedler Fred (Harcourt Brace Javanovich Inc., New York).
10. The Journalistic interview—Sherwood Hugh C. (Harper and Row, New York).
11. Professional Journalism—Patanjali Sethi, Orient Longmans, Bombay.
12. Active Reporter—James Lewis PII Publications.

#### Feature Writing :

1. Writing and Selling Feature Article—Patterson H. M. and Hude G.M. (Prentice-Hall, Inc., New Jersey).
2. Effective Feature Writing—Shoenfield C. A. (Harper Bros., New York).
3. The Art of Readable Writing—Flesch R. (Collier Books, New York).
4. Successful Writer and How they Work—Farrar L. D. (Howthorn Books, Inc., New York).
5. Features with Flair—Nicholls Brian (Vikas Publication, New Delhi).
6. Analytical Writing (A Hand-book for Business and Technical Writers)—Johnson Thomas P. (Harper and Row, New York).

#### Photojournalism :

1. Photographic Communication—Schuneman R. Smith (Editor) (Focal Press, London).
2. The Business of Photojournalism—Loosley Arthur Earnest (Hastings House, Amphoto, New York).
3. The Art of Readable Writing—Flesch R. (Collier Books, New York).
4. Successful writers and How they Work—Farrar L. D. (Howthorn Books, Inc., New York).
5. Features with Flair—Nicholls Brian (Vikas Publication, New Delhi).
6. Analytical Writing (A Hand-book for Business and Technical writers) Johnson Thomas P. (Harper and Row, New York).

#### Photojournalism :

1. Photographic Communication—Schuneman R. Smith (Editor) (Focal Press, London).
2. The Business of Photojournalism—Loosley Arthur Earnest (Hastings House, Amphoto, New York).

3. Elements of Photo Reporting—Logan III, Richard H. (American Photographic Book Publishing Co., New York).
4. Press Photography—Rhode Robert B. and McCall Floyd H. (Macmillan Co. New York).
5. Picture Editing—Evans Harold (William Heinemann Ltd. U.K.).

#### Paper IV—Editing Sub-editing, Graphics and Printing :

3 hours duration

100 marks

##### Editor :

Duties and responsibilities; Qualities required for a successful editor; Relations with proprietors, other departments of the newspaper unit, editorial staff, readers, government and other public organisations; Editor as policy maker and keeper of public conscience; Freedom of the editor from various influences and pressures. Development of the 'editorial' as a form, its structure and purpose; Editorial Page. Cartoons; Humour column and comic strips as relief; Organisation of special edit Pages like Sports, Commerce and Arts.

Editing the news of the day; Role played by sub-editors; Direction from news editor; Processing wire copy Stories field by correspondents and reports given by staff reports; Revamping the copy; Handling publicity material. Providing new leads and intros; Providing headlines and sub-heads; Determining display position of news; Copy-reading; Proof-reading; Deadline and Competitive aspect of news editing; Reference material and how to use it.

Newspaper Design : General principle; Mechanics of newspaper production; Text; Headlines: Different machines. The Composing room; Photo engraving, book-making; Letter press. Rotary, Offset, Gravure; Machine room; Technical changes.

Planning page make-up; Doing it step by step: Front page layout: Inside pages; Feature pages, style for sports pages, the editorial page: Society or women's pages; teenager's page etc.).

##### *Books Recommended :*

##### Editing : Sub-Editing :

1. Editing the Day's News—Bastian G. C. Case L.D. and Baskette F.K. (The Macmillan Co., New York).
2. Copy Reading and News Editing—Taylor H. B. and Scher J. (Prentice Hall Inc. New Jersey).

3. News Editing—Westly B. (Houghton Mifflin Co., USA).
4. The Active Newsroom : IPI Manual (International Press Institute, Zurich)
5. Facts in Perspective—Krieghbaum H. (Prentice-Hall Inc., New Jersey).
6. New Survey of Journalism—Mott. G. F. and Others Barnes and Noble Inc., USA).
7. The Art of Editing the News—Mc. Giffert Robert C. (Chilton Book Co., New York).
8. Creative New Editing—Crowell Alfred A. (WM C-Brown Cp. Publishers).
9. News Editing and Display Brown Charles H. (Greenwood Press, Westport, USA).
10. News Headlines—Evans Harold (William Heinemann Ltd., UK).
11. Handling News paper Text—Evans (Harold William Heinemann Ltd., UK).
12. Professional Journalism—Patanjali Sethi.
13. The Sub-Editors Companion—Michale Hind.

#### Graphics and Printing :

1. Functional News paper Design—Arnold E.C. (Harper and Row Publishers, New York).
2. News paper Design—Hutt A. (Oxford University Press, New York).
3. The Graphics of Communication—Tunbull A.T. and Baird R.N. (Holt, Rinehart and Winston. New York).
4. Modern News paper Design—Arnold E.C. (Harper and Row New York).
5. Modern News paper Production—Woods A. (Harper and Row. New York).
6. News paper Design—Evans Harold (William Heinemann London.)
7. Modern trends in Printing Technology—Krishnamurthy V.S. (Gannodaya Press, Madras).
8. Photo-mechanics & Printing—Mertle J.S. & Mouson S.L. (Oxford and IBH, Publishing Co., Delhi).

Paper-V : Public Relations, Development Journalism & Advertising :

3 Hours

Duration

100 Marks

Public Relations :

Concept and practice: Place of PR in an organisation; PR as means of effective communication; Building a favourable image

through PR; Product orientation of PR within the organisation and community; Relevance and application of PR technique to Indian conditions; Special fields; PR such outdoor publicity direct mailing, house Journals, sponsored press coverage: Press Relations; Government and Press: PR Campaigns.

**Development Journalism** : Role of news papers in raising the living standards in developing countries; Developmental copy, pictures, human interest stories, editorials, features, features, comments, special articles and letters to the editor relating to the dissemination of information helpful to the social, political and economic education of the people.

**Advertising** : Advertising & Publicity; Advertising as an adjunct of marketing; Role of advertising in developing economy; The flow of international advertising; Measuring advertising effectiveness; Motivating factors in advertising. Campaign; strategy; market research; Advertising as a growing industry; Forms and media of advertising; Art in Advertising; visualizing and layout; Trade marks: Advertising agency system; Costs of different media advertising; Advertisement expenditure.

#### *Books Recommended :*

#### **Public Relations :**

1. Practical Public Relations—Black Sam (Sir Issae Pitman and Sons Ltd., London).
2. Public Relations—Principles, cases and Problems :—Canfield B.R. (Richard D. Irwin Inc., Illinois).
3. Effective Public Relations—Cutlip S.M., Center A.H. (Prentice-Hall Inc., New Jersey).
4. Public Relations Ideas in Action—Center A.H. (McGraw Hill Book Co., Inc., New York.)
5. The Practice of Public Relations—Blumenthal L. Roy (The Macmillan Co., New York).
6. Publicity media and Methods—Schoenfeld C.A. (The Macmillan Co., New York).
7. Editing for Industry : The Production of House Journals—Mann Charles (William Heinemann Ltd., London).
8. How to be a good PR—Narasinha Reddy (Second Edition).

#### **Development Journalism :**

1. The Process and Effects of Mass Communication—Schramm W. (University of Illinois Press, Urbana).



2. Mass Media and National Development—Scharmm W. (Stanford University Press, Stanford).
3. Communication and Change in Developing Countries—Lerner Daniel and Schramm Wilbur (East West Center Press, Honolulu).
4. Communication and Development—Rao Y.V.L.
5. A Mannual of Development Journalism—Chalkley Allan. (Vikas Publications, Delhi).
6. Communication of Innovotion—Rogers E.M. and Shoemaker F.F. (The Free Press, New York).
7. Writing Science News for the Mass Media—Burkett D.W. (Gulf Publications Co., Houston).
8. How to Read the Financial News—Stabler C.P. (Harper and Brothers, New York).

#### Advertising :

1. Advertising Copywriting—Bucton P.W. (Grid in Ohio).
2. Advertising in the Market Place—Burke J.D. (Gregg : McGraw Hill Book Co.).
3. Advertising—Wright, Warner and Winter (MacGraw Hill).
4. Advertising in Modern Life—Gloug J.C. (Heinamann).
5. Media Planning—Admas J.R. (Business Books Ltd., London).
6. Advertising—Niecholl D.S. (Macdonald and Evanes, London).
7. Advertising Procedure—Otto Kleppner (Prentice Hall, Inc., N.J.).
8. Advertising, Theory and Practice—sandage C.H. and Fryburget (Richard D. Irwin, Illinois).
9. The Art of Advertising—George Lois and Bill Pitts Harry N. Abrams, Inc., New York).

#### Paper VI—Radio, TV Film Journalism & Mass Communications.

3 hours duration

100 marks

- A. Oral communication and the electronic revolution. The spoken word; History and growth of broadcasting, Satellite communication. Radio and TV in education; University of the Air; All India Radio; Importance of news and spoken word programme: Programme scheduling; National Programme; Special audience programme; News services; Principle; of newscasting: Radio discussion, interview, report, running commentary; Propa-

ganda on the radio; Commercial broadcasting; Spot advertisements; Sponsored programmes; Akashbharati Trust; Report; Prasarbharati.

Principles of audio-visual production: Television techniques; Scope for the development of TV in India; Problems of programme making; TV and the documentary; Television news; Problems of picture production: Collection and selection: Joining words and pictures; TV and current affairs; TV interview, TV commentary, TV pannel discussion; TV and sports.

The technique of the film and the language of cinema; Evolution of motion picture; Importance of development of Cinema in the 20th century; The process of Film-making; Technical complexity; Camera and sound tract; Kinds of film and their rationale: Features, Documentary, Advertising, Educational Films for special audiences; Mass appeal of the film: Sociological impact of Film; Government and film in India; Khosla Committee on Film Censorship; Govt. Film Division.

*Books Recommended :*

1. Broadcasting in India : Awasthi G.C. (Allied Publishers New Delhi).
2. Radio and Television : Report of the Committee on Broad-casting and Information Media, Govt. of India, Chairman, A.K. Chanda.
3. Electronic Journalism : Wood William A. (Columbia University Press, New York).
4. Film and the Director : Don Livingston (Sterling Publishers Pvt. Ltd., Delhi).
5. Television News : Writing, Editing, Filming, Broad-casting Fang I.E. (Hasting House Publishers, New York).
6. Studies in Documentary : Lovell (Seeker and Warbury, London).
7. The Technique of Television Announcing : Lewis Bruce (Pocal Press, London).
8. Indian Cinema Today : Sarkar Kobita (Sterling Publishers Pvt. Ltd., Delhi).
9. Theory of Film : Krachauer Siegfried (Oxford University Press).
10. Film Language : A Semiotics of the Cinema—Metz Christian (Oxford University Press).
11. Writing for Television and Radio : Hilliard Robert L. (Hasting House, New York).

12. Writing Television and Radio Programme : Willis Edgar E. (Holt, Rinehart and Winston).
13. Radio Programme Production : Manual of Training—Aspinall Richard (Unesco, Paris).
14. The Power Technique of Radio : TV Copywriting—Terrel Neil (Tab. Books).
15. TV News Handbook : Dary David (Tab Books).
16. Television and Language Skill-Sherrington R. (Oxford University Press).
17. The Work of Television Journalist : Tyrrell R. (Focal Press).
18. The Impact of Film : Roy Paul Modeson (Mackmillan London).
19. Broadcasting and the people : Mehra Masani.
20. Akash Bharati : National Broadcast Trust—Vergese Committee Report (Ministry of Information and Broadcasting, Govt. of India, New Delhi).

Paper—VII—Viva-Voce

100 marks.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN CHEMISTRY HELD ON 9.11.79 AT 12.00 NOON IN  
THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Prof. K.C. Joshi (Convener)
2. Shri K.P. Bhargava
3. Shri M.L. Sharma
4. Shri Anand Swaroop
- Prof. J.N. Gaur (Special invitee)
- Prof. J.P. Tandon (Special invitee)

1. Under Section 34 (4) (iv) of the University Act, the Board elected Shri Anand Swarup, P.G. Head of Chemistry, S.G.N. Khalsa College, Sriganganagar as a *member*, other than the Convener of the Board of Studies, to serve on the Committee for Selection of Examiners in the subject for the year.

2. *The Board Scrutinized* the statements of qualifications and teaching experience etc. of teachers, received from the Univ. Teaching Deptts., University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared panels of examiners in terms S (25) (2) (a) and *resolved* that the panels be made up-to-date within a fortnight as it did not include the names of a number of teachers. The Board *authored* Shri M.L. Sharma to *scrutinize* and review the panel.

3. Comments on examiners reports and question papers set were noted. There were no major complaints.

4. The Board *postponed* consideration of the Courses of Study and text books in the subject for the following examinations.

(1) Pre-University Examinations of 1982.

(II) Degree Examinations :

- (a) First Year T.D.C. (Pass) Course, Examination of 1982
- (b) Second Year T.D.C. (Pass) Course, Examination of 1982.
- (c) Third Year T.D.C. (Pass) Course Examination of 1982.

(III) Honours Examinations :

- (a) Part I Exam. of 1982.
- (b) Part II Exam. of 1982.
- (c) Part III Exam. of 1982.

(IV) Post-Graduate Examinations :

- (a) Previous (Annual) Examination of 1982.
- (b) Final (Annual) Examination of 1983.

(V) M.Phil. Examination, 1982.

*Resolved* that the courses of study for the aforesaid examinations be revised and, therefore, an another meeting of the Board be convened in the 2nd week of Jan., 1980.,

5. The Board noted the Resolution passed by the Ac. Council vide its Res. No. 4A (ii) dated 15/16th May, 1979 regarding translation of the syllabi for the various exams. in the subject in to Hindi version.

*Resolved that* the translation work be done by the University

6. The Board unanimously *resolved to recommend* that in case of any vacancy of examiners/paper-setters occurs at any examination the appointment be made by the selection of examiners committee only.

The meeting ended with a vote of thanks to the chair.

Sd/-Prof. K.C. Joshi  
Convener,  
B.O.S. in Chemistry.

MINUTES OF THE ADJOURNED MEETING OF THE  
BOARD OF STUDIES IN STATISTICS HELD ON 3rd  
NOVEMBER, 1979.

Present :—

1. Prof. B.D. Tikkiwal (Convenor)
2. Dr. K.L. Sharma
3. Shri S.K. Jain (Special Invitee)

N.B.:—These minutes were circulated to other members.

The meeting of the Board of Studies in Statistics scheduled on 8.10.1979, was adjourned without doing any business, due to sad demise of Loknayak Jaya Prakash Narain.

1. Under Section 34 (4) (iv) of the University Act, Dr. K.L. Sharma was elected as a member to serve on the Committee for selection of examiners in the subject for the year.
2. The Board scrutinised and revised the old panel of examiners under S (25) (2) (a).
3. The Board perused the report of examiners and question papers set for the various examinations 1978 and offered no comments.
4. (i) As regards recommending various courses of study and text books in the subjects for various examinations of 1982 and 1983, the Board observed that different syllabi had been framed last year after intensive discussions in the Board after getting the recommendations of the M.Phil Committee set up for the purpose. These courses are yet to be tried for some time to gain necessary experience. In view of the expressed feelings in the Academic Council not to revise courses very frequently, the

Board decided that these courses may be repeated in the respective examinations.

- (ii) The Board recommended the following scheme of practical examination for paper V of M.A./ M.Sc. (Previous) Annual examination in Statistics.

	<i>Marks</i>	<i>Hours</i>
(a) Written Examination on practical in statistical Methodology.	40	3
(b) Written examination on Computer Programming	40	1½
(c) Written Examinations on Practicals in the Design of Experiments and Sample Surveys :	50	3
(d) Practical Record and Viva-voce	60	

*Note :* The examinations in (a) and (b) are to be conducted on one day and the examination in (c) on the other day. The viva-voce examination can be arranged suitably either on any particular day or on both days.

6. As regards Hindi version of the syllabus the Board suggested that some experts be appointed for the purpose and be paid suitable remuneration.

7. The Board observed that it has already disposed of the following points at its earlier meetings :—

- (i) The changes in the various syllabi as a consequence of abolition of Unit System.
- (ii) Re-adjustment of courses of study as a consequence of the abolition of semester scheme of examination.

- (iii) To have an alternative paper in lieu of dissertation at M.A./M.Sc. level.

8. The Board observed that the item arising out of the proposal from the Director, Institute of Correspondence Studies and Continuing Education does not apply to statistics, as there is no separate viva-voce examination at M.A./M.Sc. (Statistics); instead, there is a paper IX entitled comprehensive examinations in which there is a written objective test followed by viva-voce.

The meeting ended with a vote of thanks to the Chair.

(B.D. Tikkiwal)  
*Convener*



MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN HISTORY, ARCHAEOLOGY AND CULTURE HELD  
ON 27.8.1979 AT 12.00 NOON IN THE VICE-  
CHANCELLOR'S SECRETARIAT (NEW BUILD-  
ING), UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. V.S. Bhargava (Convener)
2. Dr. G.S. L. Deora
3. Dr. B.D. Sharma
4. Dr. G.N. Sharma
5. Dr. B.S. Mathur
6. Shri H.S. Sharma
7. Shri P.N. Mathur
- Dr. R.P. Joshi (Special Invitee)

1. Under Sec. 34 (4) (iv) of the University Act, the Board *elected* Dr. G.N. Sharma, Retd. Prof. of History, 66, Dayanand Marg, Opp. Prakritik Chikitsa Kendra, Udaipur as a member other than the convener of the Board of Studies to serve on the Committee for selection of Examiners in the subject for the year.

2. The Board *authorised* the Convener and Dr. G.N. Sharma to scrutinize the statements of qualifications and teaching experience etc. of teachers received from the University Teaching Depts., University Colleges, Affiliated Institutions and other University for inclusion in the revised panel of examiners and prepared panels of examiners up-to-date in terms S.(25) (2) (a).

3. The reports of examiners were carefully gone through and afterwards free and frank comments were offered by the members of the Board on a few question papers set for the examination of 1979. However, the discussion was more theoretical because of the fact that the question papers and

reports of examiners for various examinations of 1979 were not made available.

4. The Board recommended no change in the Courses of study and text books in the subject for the following examinations :—

I. Pre-University Examinations of 1982.

II. Degree Examinations :—

- (a) First Year T.D.C. (Pass) Course Examination of 1982.
- (b) Second Year T.D.C. (Pass) Course Examination of 1982.
- (c) Third Year T.D.C. (Pass) Course Examination of 1982.

III. Honours Examinations :—

- (a) Part I Exam. of 1982.
- (b) Part II Exam. of 1982.
- (c) Part III Exam. of 1982.

IV. Diploma Course in Indian Culture Examination, 1982.

V. Post-Graduate Examinations :—

- (a) Previous Examination of 1982.
- (b) Final (Annual) Examination of 1983.

VI. M.Phil. Examination, 1982.

5. With reference to Ac. Council Res. No. 4A (ii), dated 15/16th May, 1979 the following members of the Board of Studies were authorised to translate Syllabuses into Hindi and were requested to send the M.S.S. of the same to the University Office by the end of September, 1979 :—

- (a) Dr. B.D. Sharma and Dr. G.S.L. Deora were requested to translate syllabus for M.A. Traditional Scheme into Hindi version.

- (b) Dr. R.P. Joshi was requested to translate syllabus of M.A. Alternative Scheme into Hindi version.
- (c) Shri P.N. Mathur (Beawar) was requested to translate syllabuses of Final year T.D.C. and Second Year (T.D.C.) Arts Examination into Hindi version.
- (d) Shri Hari Shanker Sharma (Jaipur) was requested to translate the syllabuses of First year (T.D.C.) and Pre-University examinations into Hindi version.

6. It was reported to the Board that the Ac. Council vide its Res. No. 14, dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated the 24th Dec., 1978 to the effect that the students of M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final Examination and resolved that :—

- (i) The facility of offering viva-voce be permitted to the students of Correspondence studies for the examination of 1979 be also extended to the M.A./M.Com. Exam. of 1980.
- (ii) In respect of the matter of allowing candidates to appear viva-voce; the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par and an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper, wherever necessary, be referred to the Board of Studies under the purview of the faculties, where the viva-voce is permissible.

*Resolved to recommend that one more paper on 'Gandhi-an Philosophy' (vide Appendix-I) be added to the list of papers already prescribed for P.G. students in lieu of viva-voce.*

7. It was reported to the Board that the Council vide its Res. No. 10 (i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., 1978 reg. introduction of viva-voce in Dissertation for the M.A. Hindi Examination and resolved as follows :—

- “(i) the matter regarding introduction of viva-voce in Dissertation for M.A. Hindi Examination be referred for consideration to the Board of Studies in Hindi with the observation of the Council that it may consider abolition of the provision of dissertation at the M.A. Hindi Exam. and if so, it may consider incorporation of an alternative paper in its place, if necessary.
- (ii) A similar reference be also made to the Boards of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the feasibility of abolition of the provision of dissertation and providing an alternative paper in its place, if necessary.”

*The Board unanimously resolved to recommend that viva-voce be continued as a part of the Dissertation.*

8. With reference to the Faculty Resolution No. 4 dated 28.3.1979, the Board considered the following Resolution received from the Evaluation Officer, Association of Indian Universities, New Delhi regarding introduction of syllabus for population studies at the Under Graduate level :—

“The Population Policy of the Government of India was welcomed. It was noted that the agricultural Universities had already recommended that population education be made a compulsory subject for their Under-graduate courses.”

*Resolved that a model syllabus for population education be prepared and circulated to the Universities for adoption in their Under-Graduate curriculum.*

*Resolved further that other Boards may consider including "Population Studies" in their syllabuses at the Under-Graduate level.*

9. The Board considered the final report of workshop on *Modernization of History courses in the Universities* received from the Under Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-2 vide his D.O. letter N. F.3-25/75 (H.R.) dated the April, 1979.

*Resolved to recommend that the syllabus for various courses of study be revised, if necessary, at its next meeting to be convened in the middle of December, 1979.*

The meeting ended with a vote of thanks to the Chair.

Sd/-

(V.S. Bhargava)

Convener.

## APPENDIX-I

*(Ref Res. No. 6 of the Minutes)*

M.A. ( History ) Paper V (d) Gandhian Philosophy.

Personality and role of Gandhi in South Africa and Indian National Movement—His concept of religion, non-violence and Satyagraha—Spiritualise as code of conduct—His concept of Swarajya--Social and Economic Philosophy--Concept of Sarvodaya; Neo Gandhism--Gandhian Philosophy a practical study.

## 1. Books recommended :—

- (a) A.N. Agarwalla : Gandhism, A Socialistic Approach
- (b) J.J. Anjana : An Essay on Gandhian Economy.
- (c) M.L. Dantvala : Gandhism Reconsidered
- (d) Dharendra Mohan Datta : The Philosophy of Mahatma Gandhi.
- (e) R.R. Diwakar : Satyagraha
- (f) Nagendra Mohan Gupta : Ghandhi and Gandhism
- (g) K.G. Marehm Tala : Gandhi and Marx
- (h) Kalidas Nag : Tolstoy and Gandhi
- (i) M. Ruthnaswamy : The Political Philosophy of Mr. Gandhi.
- (j) डा० प्रभात कुमार भट्टाचार्य : गांधी दर्शन (कालेज बुक डिपो, जयपुर) ।

MINUTES OF THE MEETING OF ADHOC COMMITTEE  
OF COURSES IN SINDHI HELD ON 12.10.1979 AT 12.00  
NOON IN THE UNIVERSITY CAMPUS, VICE-  
CHANCELLOR'S SECRETARIAT.  
JAIPUR.

Present :

1. Dr. Ram Ahuja (Convener)
2. (Mrs.) Sushila Motwani
3. Mr. J. Harjani
4. Mr. Bhambhani  
Mr. N.N. Gidwani (Special Invitee)  
(Mr.) Israni could not attend the meeting.

1. The committee *scrutinized* the statements of qualifications and teaching experience etc. of teachers received from the University Teaching Deptts., University Colleges, affiliated Institutions and other University for inclusion in the revised panel of examiners and included the following names in the panel of examiners in terms of S. (25) (2) (a).

- (i) (Mrs.) Kishanchand Sadhwani,  
Retired Principal,  
Subhash Nagar, Top Dera,  
Ajmer.
- (ii) Dr. Murlidhar Jaitley,  
Dept. of Sindhi,  
Delhi University,  
New Delhi.
- (iii) Dr. Dayal Asha,  
Head of Sindhi Deptt.,  
Chandi Bai College,  
Ulhas Nagar-3  
(Maharashtra)

- (iv) Dr. Arjun Mirchandani,  
Head of Sindhi Deptt.,  
Jai Hind College,  
Church Gate,  
Bombay.
- (v) Dr. Chetan Karnani,  
Lecturer in English,  
Deptt. of English,  
University of Rajasthan,  
Jaipur.
- (vi) Mr. Lakshman Bhatia,  
Associate Head in English,  
Govt. College,  
Ajmer.
- (vii) Mr. Gobind Ramchandani,  
Lecturer in Sociology,  
Pant Nagar University,  
Pant Nagar (U.P.)

2. The reports of examiners could not be discussed as they were not made available to the Committee. However, it was pointed out by one member that there were a large number of mistakes in the printed and the cyclostyled papers, particularly in questions written in Devnagri script. In one paper, even the content of two questions in Sindhi was different from the content in the Devenagri script. It was, therefore, felt that special care is needed in the moderation and the printing of the question papers.

3. In discussing the courses of study and text-books for P.U.C., 1st year, 2nd year and 3rd year examinations of 1982, it was felt that all courses need to be thoroughly reframed and some new and good books be prescribed for various exams. It was, therefore, decided that the framing of courses *bedeferred* and a special meeting be held after one or two months for



this purpose. In the meantime, Mrs. Motwani and Mr. Harjani members of the Adhoc Committee, were requested to get the syllabi of Bombay, Delhi and Gandhidham Universities. It was also decided to approach the newly established Sindhi Academy for recommending and making available good books in Sindhi so that they could be considered as text books for various exams. Dr. Ahuja and Mr. Gidwani were authorised by the Committee to approach the Sindhi Academy in this connection for the following examinations :

(a) Pre-University Examination of 1982.

Degree Examinations :

(a) First year T.D.C. (Pass) Course Examination of 1982.

(b) Second year T.D.C. (Pass) Course Examination of 1982.

(c) Third year T.D.C. (Pass) Course Examination of 1982.

4. With reference to Ac. Council Res. No. 4A (ii), dated the 15/16 May, 1979 the Committee *resolved to recommend* that the work of translation of Syllabi into Hindi version for the various exams. in the subject be allotted to Mrs. Motwani who will translate the Syllabi into Hindi version and will send to the University directly.

5. With reference to Academic Council Res. No. 10 dated the 1st June, 1979 and the Syndicate Res. No. 3 dated the 16th June, 79 the *Committee of Courses resolved that the Units be deleted* and the Committee accordingly corrected the manuscript of 1979 edition of the syllabus prescribed for the various exams. of 1981 in the subject.

6. The Committee discussed and noted the resolution received from the Evaluation Officer, Association of Indian Universities, Delhi regarding the introduction of topics/ courses in population studies.

7. The Committee discussed a letter No. nil dated 29.9.79 addressed to the Vice-Chancellor received from the General Secretary, Akhil Rajasthan Sindhi Adab Board. The Committee *resolved that* the Vice-Chancellor be requested to take necessary action in this connection as he deems fit.

The meeting ended with a vote of thanks to the Chair.

Sd/-

(Ram Ahuja)

*Convener.*

Adhoc Committee of  
Courses in Sindhi.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN PHYSICS HELD ON THE 5TH SEPTEMBER, 1979  
AT 12.00 NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT (NEW BUILDING),  
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri M.K. Bhargava (Convener)
2. Dr. M.P. Saxena
3. Shri H.B. Saxena
4. Dr. H.D. Purohit.

1. Under Section 344 (iv) of the University Act, the Board *elected* Shri H.B. Saxena, P.G. Head in Physics, R.R. College, Alwar as member other than the Convener of the Board of Studies to serve on the Committee for Selection of Examiners in the Subject for the year, 1979-80.

2. The Board *Scrutinized* the statements of qualifications and teaching experience etc. of teachers, received from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared the panels of external examiners in terms S.(25) (2)(a).

*The Board further resolved* that the names of all such teachers from affiliated colleges and University department as have already completed 5 years teaching experience and whose requests have been received may be included in the panel. The revised panel was accordingly sent to the office.

3. The Board perused the report of examiners and question papers set for the various examinations of 1979 and offered no comments thereon.

4. The Board *recommended* that the existing courses of study and text books in the subject for the following examinations as

contained in 1979 edn. of the syllabus be repeated with the minor additions/alterations as noted below :

I. Pre-university Examination of 1982 : (No change) :

II. Degree Examinations :

(a) *First year T.D.C (Pass) Course Examination of 1982 :*

No change in theory courses (papers) except in Physics Practicals as under :

- (i) Experiments at Sl. Nos. 9 and 10 be deleted from the list of experiments under Gr.—‘A’
- (ii) Add. experiment No. 9—“Determination of co-efficient of viscosity of water by capillary flow method” under Gr. ‘A’

And

Sl. Nos. of the experiments under Gr. ‘B’ be corrected as Sl. No. 10 to 19 instead of 11 to 20.

(b) *Second year T.D.C. (Pass) Course Exam. of 1982, B.Sc. (Hons.) Pt. II (subsidiary) subject exam. of 1982.*

(I) *Paper I—(Mechanics, Kinetic theory and Bulk properties of matter :*

- (i) The syllabus of the paper be divided into two sections viz. Sec. ‘A’ and Sec. ‘B’.
- (ii) Sec. ‘A’ will consist of the topics from paras 1 to 4 and Sec. ‘B’ from Para 5 (Wave motion) to para 8 (Statistical mechanics);
- (iii) A note, to the effect, *a student is required to answer atleast 3 questions from each section* may also to be given in the beginning of paper I.

(II) *Paper II—(Thermodynamics and optics) :*

- (i) Substitute “Without proof” for “derived from the thermodynamics” in fourth line

of para 3 under sec. 'A' of page no. 3 of 1978 edn. of syllabus.

- (ii) A note to the effect that "*students are required to answer atleast 3 questions from each section*" may be given in the beginning of paper II.

(iii) *Physics Practicals :*

Delete—experiments at sl. nos. 19 and 20 from the list of experiments prescribed for the practicals.

- (c) *Third Year TDC (Pass) course examination of 1982.*  
The Courses of study of paper I and II in physics theory and practical are available (vide appendix-I).

(d) *B.Sc. (Honours) Examinations :*

- (a) Part I Examination of 1982.  
(b) Part II Examination of 1982.  
(c) Part III Examination of 1982.

*Resolved that for the courses of study of (Hons.) Pt. I, II and III exams. of 1982 be revised by the Convener in consultation with (i) Dr. M.P. Saxena, (ii) Shri P. Pranjpe, Head of the Deptt. of Physics, D.A.V. College, Ajmer and The convener be authorised to submit the same directly to the Faculty for consideration.*

(e) *Post-graduate examinations :*

- (a) Previous Examination of 1982.  
(b) Final Examination of 1983.

*The Board authorised the convener and Dr. M. P. Saxena to request all the Heads of P.G. Deptts. of the University/Colleges to send their suggestions if any, desired by them reg. changes to be incorporated in the aforesaid course of study and then to finalise the courses of study and to send directly to the Faculty for consideration.*

- (f) *M. Phil. Examination, 1982: (No change) :*

5. With reference to Ac. Council Res. No. 4A (ii) dated the 15/16th May, 1979 *the Board resolved that* the work of translation of syllabi into Hindi version for the various examinations in the subject be allotted to the following persons who will submit the same to the convener for consolidation by 15.10.79 :—

1. Shri H.B. Saxena IYr. TDC (Pass) Course.
2. Dr. M.P. Saxena IIYr. TDC. (Pass) Course.
3. Shri B.N. Roy IIYr. TDC (Pass) Course.
4. Shri P. Pranjpe, Hons. Ist Yr. Course.
5. Shri M.R. Jain Hons. II and III Year Course.

6. *The Board endorsed the courses of study for the M.Sc. (Prev.) exam. of 1980 and M.Sc. (Final) Exam. of 1981 (Final) as recommended by it at its special meeting held on the 29th June, 1979.*

7. The Board observed that there are two sections in M.Sc. (Prev.) Physics paper IV viz “Statistical Mechanics and Electronics”. These two independent and specialised portions be named as sec. ‘A’—Statistical Mechanics Sec. ‘B’—Electronics.

The Board *resolved* that two different paper setters and examiners be appointed in the respective fields. The examiners be also given two answer books to write answers of the two different sections.

The Board also *recommended* that an examinee be required to attempt 2 questions from Sec. ‘A’ Statistical Mechanics and 3 questions from Sec. ‘B’—Electronics.

The meeting ended with a vote of thanks to the chair.

(M. K. Bhargava)  
Convener

## APPENDIX-I

(Ref. Res. No. 4 (C) of the minutes)

## SYLLABUS

B.Sc. (Pass) Final Year Examination, 1982

## 1. PHYSICS

*Scheme :*

Min. Pass marks 36 : Max. marks 100

Paper I—3 hrs. duration 50 marks

*Note :—*Six Questions to be attempted, 2 from 'A' and 3 from 'B'.

Paper II—3 hrs. duration 50 marks

*Section 'A'**Syllabus :*

Paper I—(Electricity and Electronics)

## 1. Transien 1 Current Ballistic Galvanometer :

Description Distinction from dead-beat galvanometers. Expression for charge passing through a moving coil ballistic galvanometer.

Damping, logarithmic decrement, over damping, critical damping and under damping, critical damping resistance.

Action of an inductance and capacity in a DC circuit; Growth and decay of current in circuits containing (i) inductance and resistance, (ii) capacity and resistance; Behaviour of a circuit containing inductance, capacity and resistance.

Applications of a Ballistic Galvanometer—High resistance by leakage method; measurement of strong magnetic field by search coil; inductance by Rayleigh's method.

## 2. A.C. Circuits :

Behaviour of L.R., C.R. and L. C.R. circuits; series and parallel resonance; Band width and Q of circuits

## 3. Circuit Analysis :

Kirchhoff's laws, Reciprocity, Thevenin's Norton's and Maximum Power Transfer theorems: T and  $\pi$  equivalent circuits, Four terminal network; Output and Input impedances. Basic filter circuits.

*Section 'B'***4. Conduction in Solids and Semiconductor diode :**

Free electron model; Lorentz Drude Theory Conduction and valence; band; Distinction between conductors, insulators and semiconductors; Intrinsic and Extrinsic semiconductors; N and P type; P—N junction: Characteristics under forward and reverse bias conditions; Avlanche break down and Zener diode.

**Transistors :**

N—P—N and P—N—P transistors, Transistor Operation; Common emitter, base and collector characteristics; h—para—meters and principle of transistor as an amplifier.

**5. Electron Emission :**

Electron emission ; Thermionic emission and derivation of Richardson's equation; Space charge and Child's Law.

**Rectifiers :**

Half wave and full wave rectifiers; Ripple factor; filters C. & L Input; Elementary idea of voltage stabilization (V-R tubes) and metal rectifiers.

**6. Amplifiers :**

Types of amplifiers (A, B and C); Cascade amplifiers, Coupling methods; R-C coupled tube amplifier; Its frequency response, Effects of increasing the number of stages.

**Oscillators :**

Types of oscillators ; Conditions for maintained oscillations. Barkhausen criterion, Hartley oscillator.

**1. PHYSICS***Scheme :*

Min. Pass marks 36 : Max. marks 100

Paper I—3 hrs. duration 50 marks

Paper II—3 hrs. duration 50 marks

*Syllabus :***Paper II—(Modern Physics) :**

*Note* :—3 Questions to be attempted in each Section.

*Section 'A'***1. Special Theory of Relativity :**

Michelson—Morley experiment; Principle of special theory of relativity: Lorentz transformation: Time dilation; Example of life time of unstable particles; Lorentz contraction; Mass variation:



Transformation of energy and mass; Four vectors and relativistic kinematics.

## 2. Wave Mechanics :

de-Broglie waves; Electron and neutron diffraction experiments; Heisenberg's uncertainty principle with illustrative examples; Schrodinger's equation for a single particle; Solution of Schrodinger equation for a square well potential and barrier penetration; Tunnel effect.

## 3. X-Rays :

Characteristic X-rays and Mosely Law; Scattering of X-rays by loosely bound electrons (Compton effect); Thomson scattering and polarisation of X-rays; Diffraction of X-rays; Bragg's Law; Determination of X-ray wave length.

Crystal structure; Types of lattices (classification only) Miller indices; Bremsstrahlung and continuous X-rays.

## Lasser :

Spontaneous and induced emission of light; Elementary description of Laser.

## Section 'B'

## 4. Particle Accelerators :

Linear accelerator. Cyclotron, Betatron, Electron synchrotron and Proton synchrotron.

## Particle and Radiation Detectors :

Ionisation chamber; Proportional and GM counters Cloud chamber and Bubble chamber.

## 1. Properties of Nucleus :

Mass defect and packing fraction; Binding energy of nucleus; Scattering of a particles (Rutherford's formula); Size of the nucleus,  $\alpha$   $\beta$  and  $\gamma$  decay processes; Range energy relationship of  $\alpha$ -particles.  $\beta$ -ray spectrum and its qualitative explanation; Passage of  $\gamma$ -rays through matter, qualitative explanation in terms of photo electric effect, Compton effect and pair Production.

## 6. Nuclear transformation :

Typical nuclear reactions due to protons, neutrons,  $\alpha$  particles.

Liquid drop model of the nucleus. Elements of fission and fusion process; Description of a nuclear reactor. Informative account of elementary particles and their classification.

## 1. PHYSICS PRACTICAL

Min. Pass marks 18 : Max. marks 50

Practical—5 hrs. duration—50 marks

### List of Experiments

*Note :—*Any fifteen experiments to be performed out of the following :

1. To determine the constants of Ballistic Galvanometer.
2. To determine the intensity of magnetic field using search coil and ballistic galvanometer.
3. To determine high resistance by the method of leakage or  
To measure the energy dissipated in changing a capacitor.
4. To compare the capacities of two condensers by Desauty's method and determination of dielectric constant of transformer oil.
5. To determine the inductance of a coil by Anderson's method or Rayleigh's method.
6. Study of resonance in series and parallel L-C-R circuits.
7. Study of Phase relationship in an L-C, L-R, C-R and L-C R circuit.
8. Measurement of power factor in an L-C-R circuit.
9. Measurement of peak and average voltage in a varying emf circuit.
10. To study the exponential charging and discharging of a capacitor and determine the time constant of R-C circuit. Or to study the current flow, during charging and discharging of a capacitor.
11. To plot forward and reverse bias characteristics of a semiconductor diode.
12. To determine the band gap in a semiconductor using a junction diode.
13. Study of the R-C circuit with diode as an integrating system with ( i ) alternating ( ii ) sinusoidal, input.
14. To determine the characteristics of the high voltage section of D.C. power supply.
  - ( i ) Load characteristic.
  - ( ii ) Choke input filter characteristic.
  - ( iii ) Capacitor input filter characteristic.
  - ( iv ) Ripple factor.

15. To plot the plate characteristics of a tetrode and calculate its negative resistance.
  16. To draw the characteristics of a pentode and calculate its  $g_m$ ,  $\mu$  and  $r_p$ .
  17. To study the static characteristics of a transistor :
    - ( i ) To plot common base input-output characteristics and determine  $\alpha$ .
    - ( ii ) To plot common emitter input-output characteristics and determine  $\beta$ .
  18. Study a single R-C valve amplifier. Plot frequency response and study variation R-L and C-C.
  19. Measurement of frequency using C.R.O.
  20. Use of a platinum resistance thermometer.
-

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN ECONOMICS HELD ON 16TH OCTOBER, 1979  
AT 12 NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT, NEW BUILDING,  
UNIVERSITY OFFICE, JAIPUR

Present :

1. Shri B.L. Parekh, (Convener)
2. Dr. T.N. Chaturvedi,
3. Shri G.K. Gupta,
4. Shri S.M. Chaudhary,

Shri P.N. Bhiwani and (Mrs.) Rama Kochar  
could not attend the Meeting.

1. Shri H.C. Jain Ex-convener ceased to be a member of the B.O.S. in Economics, Shri B.L. Parekh, Principal, Vijay-singh Pathik Shramjeevi College, Ajmer was appointed as Convener of the B.O.S. in Economics under section 24 E (8) of the University Act.

2. Under Section 34 (4) (IV) of the University Act, the Board unanimously appointed Shri S.M. Choudhary as a member other than the Convener of B.O.S. to serve on the Committee for selection of examiners in the subject for the year.

3. The Board scrutinized the lists of statements of qualifications and teaching experience etc. of teachers as supplied by the University office and was of the opinion that the lists were not complete and upto-date. Hence the office was requested to keep the lists upto date and duly corrected.

4. The Board perused the examiners report and question papers set for the examination of 1979 and was of the view that the IInd Yr. T.D.C. Economics Ist paper Micro,

M.A. I and II Sem. combined Paper II Micro and M.A. III and IV Sem. combined Paper XXVII/XC International Economics were bit-out of course hence *caution* should be taken while setting these papers.

5. The Board recommended following changes in the courses of study and text books in the subject :—

(i) (a) Pre University  
Examination of  
1982 — No Change.

(ii) Degree Examinations.

(b) Ist T.D.C. ( Pass )  
Course 1982 — No change.  
Delete book आर्थिक संगठन  
कमला गंगवाल एवं अन्य

(c) II T.D.C. ( Pass )  
Course, Ist  
Paper Micro  
1982 — No change.

Add :—कीमत प्रणाली एवं  
साधन आवंटन  
by Leftwitch—  
अनुवादक श्री नाथूरामका,  
राज. हिन्दी ग्रन्थ अकादमी  
जयपुर  
II T.D.C. II Paper — No change.

Add :—राजस्थान का औद्योगिक  
विकास—हरी मोहन माथुर  
भारतीय अर्थव्यवस्था—  
श्री नाथूरामका

(d) III T.D.C. Pass  
Course I Paper  
Money and Banking — No change.

Add :—books as under

1. Theory of Money  
New lym ( Oxford )

## II Paper (i) Elem.

of statistics

Course —

No change.

Add :—सांख्यिकी के सिद्धान्त एवं  
अनुपयोग—वी.एल. अग्रवाल  
राज. हिन्दी ग्रन्थ अकादमी,  
जयपुर

## II (ii) Land marks in Economic Development o UK, USSR and Japan :—

Courses

and

books

No change.

## (III) Honours Examination —

### (a) Part I Exam. 1982

Paper I and Paper II —

No change.

Books to be Added :—

- (i) भारतीय अर्थशास्त्र—एलक घोष  
World Press, Calcutta
- (ii) भारतीय अर्थशास्त्र—ए.एन. अग्रवाल  
Vikas Publishing House  
Pvt. Ltd.
- (iii) भारतीय अर्थशास्त्र—नाथू रामका.

### (b) Part II Exam. of 1982—Paper III Micro Econ.

Theory —

No change.

Add : Hindi Edition of M.L.  
Jhingan's Advance  
Economic Theory  
(Vikas publications)

(3) Paper IV Statistics — No change.

Add : S.P. Gupta's Hindi  
Edition of Statistical  
Methods (S. Chand and Co.)

(c) Part III Exam. No change.  
of 1982 Paper  
V Monetary  
Economics.

Add : मुद्रा एवं बैंकिंग—सुन्दरम्  
(S. Chand and Co.)

Paper VI—Public  
Economics No change.

Add : (i) सार्वजनिक वित्त के सिद्धान्त  
प्रेम प्रकाश शर्मा  
(ii) कराधान—नाथूरामका

Paper VII—Economic  
Growth. No change.

Add : आर्थिक विकास  
M.L. Jhingan  
Vikas Publication.

Paper VIII International  
Economics. No change.

Books to be  
Added :—

1. अन्तर्राष्ट्रीय अर्थ व्यवस्था  
बी.एम. सिन्हानी
2. अन्तर्राष्ट्रीय अर्थव्यवस्था  
रे एवम् कुन्ड  
वर्ल्ड प्रेस, कलकत्ता

(iv) P.G. Examinations :—Syllabus for M.A. (Prev.) 1979-80 and M.A. (Final) 1980-81 Annual Scheme was approved by the Board for the Prev. Exam. of 1982 and Final Exam. of 1983. Add the following books under different papers :—

- (i) Micro Economics—Asikm' pannlos (Oxford)
- (ii) Macro—Reading in Macro Economics by Sarry (Oxford)

(v) The course and the books for M.Phil. 1981 was approved and the board further recommended that the same should be continued for 1982 Examination.

6. The Board recommended that a special meeting of B.O.S. should be called during winter break to translate the syllabus in Hindi for at least 3 days and Hindi Dictionaries of technical words may be made available at the time of meeting.

7. With the abolition of *Unit System*—there is no necessity of rearrangement of the courses of study already prescribed for Annual Examination. Consequent upon the abolition of Semester Scheme the syllabus for M.A. (P) and (F) 1979-80, 1980-81 annual examinations were approved.

8. The facility of Viva-voce may be offered to M.A. Private candidates. It is further resolved that a paper on Socialist Economy as an alternative paper may be offered in lieu of Viva-Voce

(Course—M.A. Annual Scheme 1981-82 Misc. V Paper).

9. There is already a provision of Viva-voce in Dissertation paper and the Board feels that there should be no change in it.

10. Population is already being taught at under-graduate level and making it compulsory may be considered by the next B.O.S. meeting. This point be also referred to members of Rajasthan Economic Association for their comments through its Secretary.



11. The consideration of final report of the work-shop on modernization of syllabi in Economics received from University Grants Commission was postponed for the next B.O.S. meeting.

The meeting ended with a vote of thanks to the Chair.

Sd'—

B.L. Parekh

*Convener*

MINUTES OF THE SPECIAL MEETING OF THE BOARD OF  
STUDIES IN ENGLISH HELD ON THE 3RD DECEMBER,  
1979 AT 12.00 NOON IN THE OLD SYNDICATE  
HALL, UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri R.C. Joshi (Convener)
2. Shri A.S. Nandan
3. Shri V.K. Kanjolia
4. Dr. K.L. Sharma

The Committee took a note of letter No. F 4(6) Aca I/Reg. 79/19550—65 M dated 21.11.79 (Vide Appendix-I) which conveyed the V.C's observation that the book *Language Through Literature-2* was not submitted by the publishers in accordance with the guidelines of the Board of Studies and the higher University competent bodies and the Board recommended the aforesaid book against its own recommendations.

The Board would like to put on record that the book, *Language Through Literature-2*, although not submitted by the publishers in 1978, it was submitted by the publishers vide letter dated the 19th Sept., 1977 for consideration for B.A./B.Sc./B. Com. I Year T.D.C. General English course in 1978. However, the publishers had submitted *Language Through Literature-1* for consideration in June, 1978 in accordance with the guide-lines of the Board of Studies dated the of 7th July, 1978.

The Board reiterates that it found *Language Through Literature-2* in accordance with the guidelines. It contains 167 pages, out of which nearly 70 pages contain the text and the remaining 100 pages contain exercises in comprehension, vocabulary, grammar and composition.

The Board could have recommended *Language Through Literature-1* but it was unanimously agreed that *Language Through Literature-2* was a much better book for recommendation and its exercises were far superior. This book was prepared by the Central Institute of English, Hyderabad. The technicality that this book was submitted in 1977 and not in 1978 appeared insignificant and was consequently ignored. This fact was, however, recorded in the minutes of the board's meeting held on the 10th Sept. 1979 vide its Res. No. (5) (ii).

Keeping in view the Board's earlier decision 1 (b) of July 7, 1978 the following book is recommended in addition to *Language Through Literature-2*:—

“*The wreck* ( stories retold ) Machmilan replacing *Kanthapura* by Raja Rao. (OUP.)”

The Board hopes that the Vice-Chancellor will be pleased to review his earlier order regarding the previous recommendation of the Board and would have no objection to the Board's revised recommendation.

The earlier meeting was attended by all the members, together with Dr. R.K. Kaul as a special invitee when the book *Language Through Literature-2* was recommended unanimously.

As *Language Through Literature-2* contains exercises which are generally part of workbooks, the Board, in its last meeting, considered the matter and observed that no separate workbook was needed.

The Board *recommended* that both text books and work-books may be prepared and published by the University.

The meeting ended with a vote of thanks to the Chair.

Sd/—  
R.C. Joshi  
Convener.

## APPENDIX—I

( *Ref. Res. No. 1 of the minutes* )

To :

The Members of the Board of  
Studies in English.

No. F 4 (6) Aca. I/Reg./79/19560-66M Dated : 21.11.1979.

*Sub* : Recommendations of the Board of Studies in English dated the 10th September, 1979 to the effect that "Language Through Literature-2" be prescribed as a Text book in General English for the 1st Year T.D.C. Examinations of 1981 and 1982.

Dear Sir,

I write to inform you that the Vice-Chancellor has observed that the book "Language Through Literature-2" was not submitted by the Publisher in accordance with the guidelines approved by the Board of Studies and the higher competent University bodies and the Board of Studies recommended the aforesaid book against its own recommendations.

The Vice-Chancellor has, therefore, passed an order to the effect that the recommendation made by the Board in prescribing the aforesaid book as a text book in General English for the First Year T.D.C. Examinations of 1981 and 1982 be *not* accepted and (ii) a special meeting of the Board of Studies in English be convened to prescribe text book(s).

The Vice-Chancellor has also desired to know from the members of the Board of Studies in English, as to why they have gone against their own recommendations in prescribing a text-book. ? I am, therefore, to request you kindly to send your remarks in the matter for information of the Vice-Chancellor.

Further, a meeting of the Board of Studies in English has been fixed to be held on the 3rd December, 1979 a, 12.00 Noon in the old Syndicate Hall, University Campus Jaipur. Agenda for the said meeting is also sent herewith.

I am to request you kindly to make it convenient to attend the meeting of the Board on the aforesaid date and time.

Yours truly,  
V.D. Qamra  
*Registrar*

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN PUBLIC ADMINISTRATION HELD ON 10.11.79 AT  
12.00 NOON IN THE SYNDICATE HALL, UNIVERSITY  
OFFICE, JAIPUR

Present :

1. Shri B.L. Gaur — (*Convener*)
2. Shri K.D. Trivedi
3. Dr. Hoshiar Singh
4. Dr. S.R. Jain
5. Prof. H.N. Purohit (Present only on 10.11.79).

*Note :* Dr. V.M. Sinha and Shri P.S. Bhatnagar were special invitees.

1. Under section 34 (4) (IV) of the University Act, Shri K.D. Trivedi, Head of University Department of Public Administration was unanimously elected as a member, other than the Convener, for selection of Examiners Committee in the subject for the year.

2. The Board scrutinized the panels of examiners in terms of S. (25) (2) (a) and revised it accordingly.

3. The reports of examiners and question papers set for the examination of 1979 were examined. The Board found that some of the examiners have merely stated 'Satisfactory performance' and did not offer comments. It seems that they have not followed the "Instructions to the Examiners" sent by the University in this respect. The examiners should strictly adhere to the Instructions given by the University.

4. The courses of study and Text Books in the subject for the following examinations were discussed and decision arrived at as follows :—

- (i) Pre-University Examination of 1982—No Change.

- (ii) Degree Examination. 1982
- |   |   |                      |
|---|---|----------------------|
| (a) I Year T.D.C. (Pass) Course<br>Exam. of 1982  | } | Vide Appendix-<br>I. |
| (b) II Year (Pass) Course<br>Exam of 1982 Paper-I<br>Paper—II—State<br>Administration   |   |                      |
| (c) III. Year T.D.C.<br>(Pass) Course of Exam. 1982<br>Paper—I Public Adminis-<br>tration in India<br>Paper --II Local Adminis-<br>tration in India |   |                      |

(iii) Honours Examinations :

- |                             |   |             |
|-----------------------------|---|-------------|
| (a) Part I Exam. of 1982.   | } | No. Change. |
| (b) Part II Exam. of 1982.  |   |             |
| (c) Part III Exam. of 1982. |   |             |

(iv) Post Graduate Examinations :—

- |   |   |             |
|---|---|-------------|
| (a) Previous Examination of 1982.       | } | No. Change. |
| (b) Final (Annual) Examination of 1983. |   |             |

- (v) M.Phil. Examination, 1982. No. Change.

5. With reference to Ac. Council Res. No. 4A (ii) dated the 15th/16th May, 1979 regarding translation of Syllabus into Hindi version the Board decided that Shri K.D. Trivedi, Reader and Head of the Deptt. of Public Administration be entrusted with this work with assistance of the members of the staff of the Department.

The Board also decided that Shri H.N. Purohit, a member of Board of the Studies be requested to translate the papers connected with Economics prescribed in the Syllabi of various courses. After the work is completed a meeting of the B.O.S. be convened to finalise the work. As far as possible the work may be completed by the 2nd week of December, 1979.

6. With reference to Ac. Council Resolution No. 10 dated 1st June, 1979 and the Syndicate Res. No. 3 dated the 16th June, 79. The Board was decided that the existing arrangement be continued after incorporating necessary changes in the Syllabi by the Board consequent upon abolition of unit system.

7. With reference to Ac. Council Res. No. 11 dated 1st June, 1979 and the Syndicate Res. No. 2 dated 16th June, 1979 regarding abolition of the Semester Scheme of Examination and introduction of Annual Scheme of the Examination in its place, the Board noticed with great concern that due to some mistake two types of Syllabus have been printed and sold in the market for the M.A. Public Administration (Annual Examination Scheme) for M.A. (Pre.) Exam., 1979 and 1980 and 1981. Actually the syllabus having 46 pages and which is at present available in the market is in operation. Therefore the syllabus containing pages 59 be withdrawn immediately and the students be notified accordingly. The Board also felt that at page 2 in the last of papers in Group-B. Dissertation and Viva-Voce have been eliminated and these papers be added as papers XVI and Paper XVII respectively.

8. With reference to Ac. Council Res. No. 14 dated 11th March, 1979 regarding proposal from the Director of Correspondence and Continuation Education, the Board observed that Viva-Voce is being permitted for the M.A. (Final) Exam., 1980.

9. With reference to proposal of Dr. Satyendra Chaturvedi, Convener, reg. abolition of Dissertation, the Board expresses its disagreement with the suggestion and feels that dissertation is very essential for developing research attitude in Students.

10. With reference to the representation made by the students and forwarded by Shri K.D. Trivedi, duly recommended by the Dean, Faculty of Social Sciences, the Board *resolved to recommend* as under :—

(1) Paper Labour Welfare Administration—Part-II



should also be added in Group—B for the (III and IV) Semester Examination of 1980.

- (2) Regarding paper 'Research 'Methodology' status quo be maintained, because the papers 'Development Administration and Research Methodology' are already available in Group-E.

11. The Board Considered the Syllabi for population studies *and resolved that* the main contents of this Syllabi be incorporated in the syllabus for the subject of General Education.

The meeting ended with a vote of thanks to the Chair.

Sd/-B.L. Gaur.  
Convener

## APPENDIX—I

## B.A. Pass I Year.

## 28. PUBLIC ADMINISTRATION

*Scheme :*

Min. Pass Marks 36 : Max. Marks 100

One Paper—3 hrs. duration

100 Marks

*Syllabus :***Elements of Public Administration**

Meaning, Nature, Scope and Significance of Public Administration—Public and Private Administration. Public Administration as an independent academic discipline—Relationship of Public Administration with Politics Law—Sociology-Psychology, Economics.

Organisation—Meaning and Nature; Formal and Informal organisation—Principles of organisation. Chief Executive, Line and Staff—Division of work, Hierarchy, Unity of Command—Span of Control—Delegation — Coordination — and Supervision.

Principles of Personnel Administration, Recruitment Classification—Promotion—Training—Compensation Disciplinary Action—Retirement benefits.

Financial Administration—Elements of Budget, Preparation of Budget—Legislative action on the budget—Public Accounts Committee—Estimates Committee—Comptroller and Auditor General of India.

Control over Public Administration—Problems and Mechanics of Control by the Executive—Parliament and Judiciary.

*Books recommended :***A. Core Reading.**

1. Sharma (M.P.) : Public Administration—Theory and Practice.
2. Awasthi and Maheshwari : Public Administration.

3. डा. बी.एम. सिन्हा—लोक-प्रशासन के सिद्धान्त एवं व्यवहार ।
4. जियाउद्दीन खान एवं अन्तर सिंह—लोक प्रशासन ।

*Books for reference :*

1. White : Introduction to the study of Public Administration.
2. Willoughby : Principles of Public Administration.
3. Gladden : Essentials of Public Administration.
4. Pfifner and Presthus : Public Administration.
5. Dimock and Dimock : Public Administration.

## 15. PUBLIC ADMINISTRATION

### B.A. Pass II Year

*Scheme :*

*Min. pass marks 72 : Max. marks 200*

Paper I—3 hrs. duration	100 Marks
Paper II—3 hrs. duration	100 Marks

*Syllabus :*

Paper I Administrative Institutions.

Administrative Institutions in a democratic and Socialist—Society—The concepts of *laissez Faire* welfare State and Administrative State.

Organization of Government—Legislature—Its Role and Decline in Modern times—Executive—Types and Relationship with Legislature—Judiciary—Functions and Role with Special reference to the power of Judicial Review—Democracy and Administration—Features of a democratic administration—Role of Bureaucracy—Political parties and pressure groups and their interaction with each other.

Organisation and administrative working of Finance Commissions—Planning Commission of India and the National Development Council.

Election Commission and the administration of election in India. University Grants Commission, U.P.S.C.

Organisation and working of (i) Central Social welfare Board and (ii) Railway Board.

Reserve Bank of India Department of Science and Technology.

*Books recommended :*

**A. Core Books :**

1. Wald : Administrative State.
2. Field : Government in Modern Society.
3. Pranjappa : Planning Commission.
4. I.I.P.A. Organisation of the Government of India.
5. जियाउद्दीन खान एवं अन्तर सिंह : प्रशासकीय संस्थाएँ ।
6. Reports of Finance Commissions of India.
7. M.G. Gupta : Modern Government.

**B. Books for Reference :**

1. Catbin : Systematic Politics.
2. Salt : Political Institutions : A Preface.

**C. Journal :**

1. Indian Journal of Public Administration, Delhi.

## 15. PUBLIC ADMINISTRATION

*Scheme :*

Min Pass marks 72 : Max marks 200

Paper I—3 hrs. duration	100 Marks
paper II—3 hrs. duration	100 marks

*State Administration in India.*

State Administration in India—Its growing importance—General background of State Administration in Indian States with special reference to the State of Rajasthan,

The Office of the Governor—Powers—Functions and Role in State Administration—Relationship with Council of Ministers.

The Office of the Chief Minister—Powers Functions, Role and Importance of the Office—Relationship with Council of Ministers.

Organisation of the State Secretariat—Administrative organisation of department. Organisation and working of the Departments of Home, Finance and Agriculture in Rajasthan. Chief Secretary; His Role and Significance in State Administration.

Organisation and working of the following Boards and Directorates in the State of Rajasthan :

- (a) Revenue Board.
- (b) State Electricity Board.
- (c) Directorate of Agriculture.
- (d) Directorate of Education.

#### *Personnel Administration :*

Personnel Administration—Role of the State Civil Services—Recruitment to Higher Civil Services in Rajasthan (R.A.S.—R.P.S.—R.A.C.S.)—Organisation and working of the Rajasthan Public Service Commission. Training of State Civil Services, Organisation and Functions of State Training Institutes in Rajasthan.

#### *District Administration :*

Organisation of District Administration—Collector—His Functions and Position—

Revenue administration at the district level—The S.D.O. Tehsildar and Patwaris.

#### *Books recommended :*

##### **A. Core Books :**

1. S.R. Maheshwari : Indian Administration.
2. S.S. Khera : District Administration in India.
3. M.V. Paylee : Indian Constitution (Hindi ed.)
4. A.R.C. : Report on State Administration.
5. All Zaheir and Gupta : Organisation of Government of Uttar Pradesh.

6. लक्ष्मण सिंह राठी एवं पी.एल. माथुर लोक प्रशासन में सिद्धान्त एवं राजस्थान राज्य ।

#### B. Reference Books :—

1. D.P. Singh : Readings in Indian Administration.
2. S.L. Verma : Revenue Board in Rajasthan.
3. I.I.P.A. : Revenue Board.
4. Rajasthan Govt. : Secretariat Manual.
5. Rajasthan Govt. : Report of Administrative Reforms Committee (Mathur Committee Report, 1963).
6. Rajasthan Govt. : Report of Committee on Training, 1963.
7. H.C.M. Institute of Pub. Admn. : Management of Higher Personnel.
8. S.R. Maheshwari : Evolution of Administration in India.
9. I.I.P.A. : Indian Journal of Public Administration (State Administration Special Numbers July-Sept., 1976).
10. J.D. Shukla : State and District Administration in India. (National).
11. B. Mehta : Dynamics of State Administration (Chugh Publications).
12. Annual Report of the Departments of the Government of Rajasthan, Jaipur.

#### C. Journals :

1. Indian Journal of Public Administration (New Delhi).
2. Prashasika : H.C.M.S.I.P.A., Jaipur.
3. Management in Government, Delhi.

### 15. PUBLIC ADMINISTRATION

#### B.A. Pass III

#### Scheme :

Min. Pass Marks 72 : Max. Marks 200

Paper I—3 hrs. duration	100 marks
Paper II—3 hrs. duration	100 marks

*Syllabus :***Paper I—Public Administration in India.**

Evolution and Development of Central Administration in India since early times.

Organisation and functions of the Central Secretariat. The Ministry system and its working in the Government of India.

The organisation and working of Cabinet Secretariat—The Cabinet Secretary and his role as Chief-Coordinator. The Prime Minister's Secretariat is relationship with Cabinet Secretariat and other Ministries of the Union Government.

Administrative organisation and functions of the Ministries of Home, Finance, and Affairs.

Personnel Administration in the Government of India. Organisation of All India, Central and Specialist-Public Services

Recruitment—Training Promotion—Classifications—Disciplinary action—Procedures and Staff Association in the Public Service in India.

Problems of Administrative Reforms in India—Major Recommendations of the Reports of the Administrative Reforms Commission with special reference to Reports Machinery of Govt. and Personnel Administration A Review of the Administration Reforms since 1947 with special reference to Gorawal a Report and Appleby Report 1953).

*Core Books :*

1. Maheshwari S.R. : Indian Administration.
2. Ashok Chanda : Indian Administration.
3. Bhattacharya : Indian Administration.
4. I.I.P.A. : Organisation of the Government of India.
5. Rao K.V. : Parliamentary Democracy in India.
6. Singh D.P. : Problems of Public Administration.

7. P. Saran : Public Administration in India.
8. P.D. Sharma : And others Bharat me Lok Prashashan (Raj. Hindi Granth Academy).

### *Reference Books :*

1. Reports of the A.R.C. Delhi.
2. Palmer, Indian Political System
3. Misra B.B., Administrative History of India.
4. Maheshwari, A.R.C.
5. Reports of the Parliamentary Committees.

### *Journals :*

1. Indian Journal of Public Administration, Delhi.
2. Journal of the Constitutional and Parliamentary Studies, Delhi.

## 15. PUBLIC ADMINISTRATION

### *Scheme :*

Paper I—3 hrs. duration	100 marks
Paper II—3 hrs. duration	100 marks

### *Syllabus :*

#### **Paper II—Local Administration :**

Meaning—Nature and Significance of Local-self Government in Modern Administrative State. Evolution and concepts of Local-self Government during the Ancient, Medieval and Modern periods of Indian History.

The organisational Structure of Urban Local-self Government in India, Classification, Composition, Functions Powers and Role of various kinds of Local bodies. Local Administration of the Metropolitan Towns—Municipal Corporations and their Problems of Autonomy and Accountability.

Theory and Practice of Democratic Decentralisation in India. Panchayati Raj Institutions—Zila Parishad, Panchayat Samiti and Village Panchayats : Their Organisation and functions Features of Panchayat Raj in Maharashtra, Gujarat and Rajasthan.



Local Personnel Administration : Problems of Recruitment, Classification, Promotion, Training and service conditions of Local Officials.

Financial Administration of Local bodies in India. Augmentation of local resources. State control over local bodies.

The role of the Directorate and the concept of autonomy of Local-Self Government in India.

#### *Books Recommended :*

1. R. Argal : Municipal Government in India.
2. R.S. Maheshwari : Local Government in India.
3. M.V. Mathur : Panchayati Raj in Rajasthan.
4. R.L. Khanna : Municipal Government and Administration in India.
5. S.K. Bhojee : Local Government in India  
V.M. Sinha-Bhart.

#### *Subsidiary Readings :*

1. S.C. Jain : Community Development and Panchayati Raj.
2. Govt. of Rajasthan : Sadiq Ali Report, 1964.
3. Govt. of Rajasthan : Village Panchayat Act, 1953.
4. Govt. of Rajasthan : Panchayat Samities and Zila Parishads Act, 1959.
5. Govt. of Rajasthan : Municipalities Act, 1959.
6. Govt. of India : Diwakar Committee Report, 1963.
7. Balwant Rai Mehta Committee Report, 1957.
8. Sadiq Ali Report, 1964.
9. Ashok Mehta Committee Report.

#### *Journals :*

1. Nagarlok, M.P.A., Delhi.
2. Indian Journal of Local Self-Government, Bombay.

MINUTES OF THE SECOND MEETING OF THE B.O.S.  
IN HISTORY, ARCHAEOLOGY AND CULTURE  
HELD ON 24-12-79 AT 12.00 NOON IN THE  
UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. V.S. Bhargava (Convener)
2. Dr. G.S.L. Deora
3. Shri H.S. Sharma
4. Dr. G. N. Sharma

Note :—Dr. B. S. Mathur, Udaipur, and Dr. B. D. Sharma, Bikaner could not attend the meeting.

1. In the light of report of workshop on Modernisation of History Courses in the Universities received from the under Secretary U.G.C. New Delhi *vide the Board made minor changes* in the courses of study prescribed for "Paper I—Main currents of World History" for Final Year T.D.C. Arts Exam., and in "Paper III(a) prescribed for M.A. Previous (Traditional Scheme) Exam. *vide Appendix-I.*

2. *The Board resolved* that the Alternative Scheme of Examination as contained in the 1978 edition of Syllabus of M.A. History be deleted and the courses prescribed by the Board at its meeting held on 27-8-1979 should continue as an Alternative to Traditional Scheme

3. *Further, the Board resolved* that a paper entitled "Main Sources of Indian History" be introduced as an alternative to "Paper I—Evolution of Indian Society and Thought" prescribed for M.A. (Alternative Scheme) Previous Examination as per 1979 edition as per Appendix-II.

The meeting ended with a vote of thanks to the chair.

Sd/- V. S. Bhargava  
Convener  
B.O.S. in History,

## APPENDIX I

( *Ref. Res. No. 1 of the Minutes* )

Paper III(a)—HISTORY OF RAJASTHAN (1200—1900 A.D.)

Main Sources of Rajasthan History; Achievements of Pratiharas of Jalore and Mandore (758—1030 AD); The Chauhan Empire and Prithviraj III; Rajput resistance to Turks with special reference to Hamirdeo; Ratansingh and Kanhaddeo; Achievements of Kumbha, Sanga, Maldeo, Chandarsen and Partap; Collaboration with the Mughals with special reference to Man Singh, Raje Singh and Jaswant Singh, Relations with the Marathas with special reference to sawai Jaisingh; Relations with the East India Company with special reference to Zalem Singh—Treaties of various Rajput States (Jodhpur, Udaipur, Jaipur and Bikaner) and this impact; Role of Rajasthan in 1857.

*Books* : Add the following books.

1. N.C. Roy : Maharaja Jaswant Singh.
2. N.R. Khadgawat : Role of Rajasthan in 1857.

## APPENDIX II

( Ref. Res. No. 3 of the Minutes )

### HISTORY ( Annual Scheme)

Alternative Scheme

M. A. (Previous)

*Any One Paper.*

I (A) Evolution of Indian Society and Thought.

Or

(B) Main Sources of Indian History.

Epigraphic—Numesmetic—Archaeological—Historical literature—Accounts of Foreign Travellers—Archival.

Epigraphic—Ashoka's edicts—Gupta Inscriptions—Raj-Prashashti—Archaeological—Indus Valley and its contemporary sites, Important movements and forts of medieval India. Gupta coins; Coins of medieval period;

*Historical Literature* :—Harsha Charitra, Rajtarngini. Prithviraj Raso; Tabkat-i-Nasiri Tarikhoi-Firozeshahi; Akbarnama, AIN-i-Akbari, Baburnama, Muntkhab-ul-lubab.

*Accounts of Foreign Travellor* :—

Magasthenes, Fai Hien. (Huang Chong). Alberuni, Ibn batuta Bernier, Mannuci, Young husband mission, Col. Tod.

Archival—Importance of the study of archival sources.

*Books recommended :*

1. Philip—Historians of India, Pakistan & Ceylone.
2. S. N. Sen—Sources of Indian History, Vol. I & II.
3. S. R. Sharma—Bibliography of Medieval India.
4. M. Hasan—Historians of Medieval India.
5. Ilbrt & Downson—History of India as told by its historians Vol. I—VIII.  
( both Hindi & English )
6. D. C. Sircar—Select Inscription.
7. Keeth—Classical Sanskrit Literature.
8. R. B. Pandey—Ashoka ke Abhilekha
9. Legge—Travelles of Ancient India
10. Bhandarkar—Numesmetics.
11. P. Hardy—Historians of Medieval India.
12. K.K. Datta—Historians of Medieval India.

MINUTES OF THE MEETING OF THE COMMITTEE OF  
COURSES IN HOME SCIENCE HELD ON THE 26TH  
OCT. 79 AT 12.00 NOON IN THE UNIVERSITY  
OFFICE, JAIPUR.

Present :

1. (Mrs.) Indu Mathur.
2. (Mrs.) Laxmi Ojha
3. (Mrs.) Mira Varma (Convener.)

1. The Committee scrutinised the statements of qualifications and teaching experience etc. of teachers received from the University colleges and affiliated institutions for inclusion in the revised panel of examiners and prepared panels of examiners in terms of S. 25 (2) (a). The panels were approved after making some corrections wherever necessary. Addition of new names in panel of examiners for B.Sc. (Home Science) could not be made since the performas sent to various Home Science Colleges were not received.

2. The Committee studied the reports of examiners and question papers set for the I, II and III year pass course examination. There were no comments.

3. (i) - The Committee studied the existing courses of study and text books in the subject as contained in 1979 edition of the syllabus for the following examinations. There were no changes in the schemes of examinations and no alterations were considered necessary in the syllabus.

(a) Pre University examination of 1982.

Degree Examination :

- (a) First year T.D.C. (pass) course exam. of 1982
- (b) Second year T.D.C. (pass) course exam. of 1982
- (c) Third year T.D.C. (pass) course exam. of 1982

- (a) B.Sc. Home Science Part I 1982
- (b) B.Sc. Home Science Part II 1982
- (c) B.Sc. Home Science Part III 1982

(ii) The following Books were approved as Reference Books for the respective courses.

- (a) B.Sc. (Home Science) II year, paper VII (Household Physics) गृह भौतिकी—by M.G. Bhatwadeker, published by the Hindi Granth Academy.
- (b) II year Arts paper-I (Hygiene and Mothercraft) आरोग्य विज्ञान तथा जन स्वास्थ्य—डा० लक्ष्मीकान्त, किताब महल, इलाहाबाद ।
- (c) II year Arts paper-II (Foods and Nutrition)
  - (i) पोषण के सिद्धान्त—ईवा, डी, विल्सन कैथराइन एव, फिराट, मेरी ई, फ्यूका, अनुवाद श्रीमती सरोजिनी की आर्य प्रकाशक हिन्दी ग्रन्थ एकादमी ।
  - (ii) आहार एवं पोषाहार—डा० सत्यदेव आर्य ।
  - (iii) आहार विज्ञान के मूल सिद्धान्त—सुधा नारायणन
  - (iv) आहार नियोजन—सुधा नारायणन ।
- (d) I year T.D.C. Arts, paper-I (Anatomy and Physiology).
  - (i) शरीर रचना एवं क्रिया विज्ञान—डा० लक्ष्मीकान्त एवं डा० गुनेश्वर सिंह

4. The Hindi versions of the T.D.C. (pass) course examination has already been done in accordance to the AC. Council Res. No. 4A (ii) dated the 15/16th May, '79.

5. With reference to Academic Council Resolution No. 10 dated the 1st June, 1979 and Syn. Res. No. 3 dated 16th June, 1979 the Committee resolved that consequent upon abolition of Unit system the following papers be divided into

sections as follows :—

- (i) I year T.D.C. Arts, Paper-II (Textile & Laundry Work)

Total marks—50

Section—A—Textiles —30 marks

Section—B—Laundry —20 marks

- (ii) II year T.D.C. Arts, Paper-I (Hygiene & Mother Craft)

Total Marks—50

Section—A—Hygiene —30 marks.

Section—B—Mother Craft —20 marks.

- (iii) III year T.D.C. Arts Paper-I (Home Management)

Total Marks—50

Sec. A and Sec. C —30 marks.

Section—B —20 marks.

6. The Committee considered Faculty Res. No. 8, Dated 23.3.1979. The subject Home Science includes study of Family Welfare as a part of the curriculum, and as such covers a sizeable portion of the recommended syllabus for population studies.

7. The members of the committee strongly emphasised the need to set question papers for practical examination. The underlying reason being that more than 10 centers are offering Home Science as a subject in Rajasthan and it has been observed that :—

- (i) There is no uniformity in the questions set for different centres.
- (ii) Disparity exists in distribution of marks by different examiners.

The paper setting of question papers in practical examination will introduce uniformity in the standards.

8. The Committee recommends the following system of

distribution of marks for the various practical examinations.

(i) II year T.D.C. Arts :—

(a) *First Aid and Home Nursing Practical.*

Total Marks 25

- (i) Sessionals (including file, first aid box, home medicine chest) 8 marks
- (ii) Practical demonstration and apparatus (bandages, Thermometer reading, bed making, procedure for enema baby bath etc. use of various apparatus like bed pan, urinal, backrest, hot water bag, ice cap etc. 9 marks.
- (iii) Viva according to syllabus 8 marks

(b) *Laundry Practical :*

Total Marks

25

- (i) Sessional and file 8 marks
- (ii) Stain removal 4 marks
- (iii) Washing and finishing of garment 8 marks
- (iv) Small problem such as spot cleaning, Tie & dye Simple home dyeing 5 marks.

(ii) III year T.D.C. Arts:—

(a) *Cooking Practical*—Total marks 30

- (i) Sessional and file 10 marks
- (ii) Menu planning, Time planning & order sheet— 5 marks
- (iii) Method of work including cleaning 3 marks
- (iv) Table arrangement and service 4 marks
- (v) Taste 8 marks

(b) *Home Management Practical*—Total Marks—30

- (i) Sessionals and file— 10 marks
- (ii) Major problem 12 marks  
(room arrangement, table arrangement, alpana, parties.)



Minor problem— 8 marks  
(cleaning of glass, metals, leather, carpet,  
wood polishing, flower arrangement.)

(c) *Needle Work Practical*—Total Marks 40

- (i) Sessionals including file & garments— 20 marks
- (ii) Drafting & cutting out of pattern— 6 marks
- (iii) Stitching of garment — 9 marks
- (iv) Embroidery or knitting design — 5 marks

9. With reference to the letter from the Principal, Sophia College, Ajmer dated 23.10.79, regarding the subject to be offered in B.Sc. Part III examination, the action has already been taken by the Registrar, University of Rajasthan.

10. The Committee recommends the following qualifications for eligibility for admission to B.Sc. (Home Science) Part II classes directly :—

“I year Science 10+2 scheme science students may be admitted in II year B.Sc. Home Science provided that they have obtained Ist division in Science subjects—Physics, Chemistry, and Biology and are prepared to clear I year B.Sc. Home Science paper VI (Group-A) Anatomy and Physiology.”

11. The Committee noted the eligibility of admission to the B.Sc. Home Science Part-I clause as per provision of O.232-A of the University hand book, Part II.

12. The Committee strongly recommended and resolved that the Director, College Education, Govt. of Rajasthan, be apprised with the following problem involved in the teaching of Home Science in the Govt. colleges affiliated to the University of Rajasthan,

(i) Health Science is a very important aspect of the subject Home Science and covers two theory papers and one practical i.e.

Paper—I —I year Arts.

Paper—II II year Arts.

Practical (First Aid and Home Nursing)—II year Arts.

For a group of 60 students the number of classes for the above papers will be a minimum of 16 periods/week.

(ii) The subject health science incorporates teaching of Anatomy, physiology, Hygiene, public health, mother craft, first aid, and Home nursing, and as such requires the teaching by a person especially trained in these aspects to maintain the academic standards of the subject. Conventionally it must be taught by an M.B.B.S./M.Sc. Nursing, as quoted in the O.65 University Hand Book Part-II. Vol I.

The teaching of Health Science as a practice is being done by Home Science personnel, since as per Govt. rules the appointment of an M.B.B.S. can be done only as a part time lecturer on a payment of Rs. 150/-p. month, No. M.B.B.S. person is willing to work at such low payment which hardly covers conveyance expenses. It is thus recommended that a full time M.B.B.S. lecturer be appointed to take these classes (as is done in Home Science Colleges all over India.) or the remuneration be raised to a reasonable amount to interest a person in part time teaching.

*Convener,*

C.O.C. in Home Science,

**MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN AGRICULTURE HELD ON 16.11.79 IN THE UNIVER-  
SITY OFFICE, JAIPUR.**

**Present :**

- |   |                           |
|---|---------------------------|
| 1. Shri M.S. Chhonkar ( <i>Convener</i> ) |                           |
| 2. Shri J.K. Singh                        |                           |
| 3. Dr. R.A. Singh                         |                           |
| 4. Shri J.P. Jain                         |                           |
| 5. Shri Devi Singh                        | } <i>Special invitees</i> |
| 6. Shri R.P. Yadav                        |                           |
| 7. Shri K.K. Pandey                       |                           |
| 8. Shri R K. Chaturvedi                   |                           |
| 9. Shri K.D. Saxena                       |                           |
| 10. Shri K.S. Khangarote                  |                           |

1. Under section 34 4) (iv) of the University Act, Dr. R.A. Singh of Dayanand College, Ajmer was elected as member other than the convener of the Board of Studies to serve on the Committee, for selection of examiners in the various subjects for the year.

2. No new statement of qualifications and teaching experience etc. of teachers was placed on the table for scrutiny for inclusion in the revised panel of examiners. However it is recommended that the university should write letters to different Agriculture colleges/Universities asking for the statements of qualifications of their teaching staff.

3. No reports of examiners and question papers set for the examination of 1979 were placed before the committee, Hence comments could not be offered.

4. The Board considered the courses of study for the following examinations together with the relevant additions and/or alterations to the regulations and ordinances :

( i ) Pre-University examination in Agriculture 1982

—No change.

- (ii) Pre-professional examination in Agriculture 1982 minor changes have been made as given on Appendix-I.
- (iii) B.Sc. Ag. Part-I examination, 1982—minor changes have been made as given on Appendix-II.
- (iv) B.Sc. Ag. Part-II examination, 1982—minor changes has been made as given on Appendix-III.
- (v) B.Sc. Ag. Part-III—examination, 1982—minor changes have been made as given on Appendix—IV.

“Students will undertake a tour of places of Agricultural importance in the country of about two weeks” This should be added on page IV as point No. 6 in B.Sc. Ag. Part-III of the syllabus 1977.

5. With reference to the Academic Council Res. No. 4A(II) dated 15/16th May, 1979, the Board *resolved* that the following subject specilists should translate the syllabus into Hindi version and send it to the convener. The university should formally request the following to do the needful. The syllabus containing the courses of study pertaining to 1981 examinations should also be sent to them :—

1. Animal Husbandry and Dairying  
Shri M.S. Chhonkar. (Ajmer)
2. Botany (P.P. Ag ) and Plant Pathology  
Shri J.P. Jain, (Sangaria)
3. Ag. Botany, Plant-breeding  
Shri R.K. Chaturvedi, (Ajmer)
4. Agr. Chemistry  
Shri J.K. Singh, (Sangaria)
5. Agronomy (P,P. Ag. and III Yr.)  
Shri Devi Singh, (Sangaria)
6. Agronomy (I Year and II Year)  
Shri Y.S. Sirohi, (Ajmer)
7. Extension  
Shri R.P. Yadav, (Sangaria)
8. Econ. and Farm Management  
Dr. R.A. Singh, (Ajmer)

9. Agr. Engineering  
Shri K.K. Pandey, (Sangaria)
10. Horticulture  
Shri R.V. Singh, (Sangaria)
11. Physics  
Shri J.R. Barthora, (Sangaria)
12. Maths.  
Shri R. Gupta, (Sangaria)

6. The Academic Council resolution No. 10 dated the 1st June, 1979 does not concern the Agricultural courses as there is no unit system in agriculture. Hence no action is called for.

7. The matter of minimum requirements prescribed by the University was considered by the Board. The Board felt that since the time these recommendations were made, the prices have increased two-three times, hence the following revisions are suggested.

<i>Items</i>	<i>Existing Provision</i>	<i>Suggested recommendations</i>
<i>1. Non-Recurring Grant.</i>		
1. Agronomy	71,000/-	1,50,000/-
2. Animal Husbandry and Dairying	1,40,000/-	1,50,000 -
3. Horticulture	70,000/-	1,00,000/-
4. Agr. Economics, Statistics and Extension.	15,000.-	50,000/-
5. (a) Agricultural Engineering	38,000/-	50,000/-
(b) Physics	—	—
6. Agrl. Botany and Plant Pathology	40,000/-	75,000;-
7. Agrl. Zoology and Entomology	40,000/-	50,000/-
8. Agrl. Chemistry	25,000/-	50,000/-
<i>2. Recurring Grant.</i>		
1. Agronomy	90,000	1,20,000
2. Animal Husbandry and Dairying	60,000/-	1,20,000/-

3. Horticulture	30,000/-	40,000/-
4. Agrl. Economics, Statistics and Extension	1,000/-	10,000/-
5. (a) Agrl. Engineering	6,750/-	10,000/-
(b) Physics	2,250/-	5,000/-
6. Agrl. Botany and Plant Pathology	6,750/-	15,00 /-
7. Agrl. Zoology and Entomology	2,250/-	10,000/-
8. Agrl. Chemistry	24,000/-	50,000/-
3. <i>Expenditure on Books</i>		
1. Agronomy	1,000/-	3,000/-
2. Animal Husbandry and Dairying	1,000/-	3,000/-
3. Horticulture	1,000/-	3,000/-
4. Agrl. Economic F.M. and Statistics and Extension	1,000/-	3,000/-
5. (a) Agrl. Engineering	1,000/-	3,000/-
(b) Mathematics	200/-	600/-
(c) Physics	200/-	600 -
6. Agrl. Botany and Plant Pathology	1,000/-	3,000/-
7. Agrl. Zoology and Entomology	1,000/-	3,000/-
8. Agricultural Chemistry	1,000/-	3,000/-
9. English and Gen. Reading	500/-	1,500/-

The meeting ended with a vote of thanks to the chair

Sd/-  
M.S. Chhonkar  
Convener,  
B.O.S. in Agriculture.

## APPENDIX—I

( *Ref. Res. No. 4(ii) of the Minutes* )

## Pre-Professional Agriculture

Page 18

## CHEMISTRY

1. Add the following as note below Min. Pass Marks  
“NOTE—examinees are supposed to attempt at least 40% questions from physical and Inorganic and 40% from organic portion. Rest 20% they may attempt from any portion.”
2. Add ‘I’ before the heading Physical.  
Add ‘II’—‘Inorganic’ over the 5th para “Non-Metals... italics.”

Page. 19

1. Add ‘III. Organic’ between 7th and 8th para.

## APPENDIX—II

( *Ref. Res. No. 4(iii) of the Minutes* )

B.Sc. (Ag.) Pt. I

AGRONOMY I

Page 33

1. Add 'Soil profile' at point No. iii
3. Renumber accordingly iii to X items. They may now be numbered as iv to xi.

Page 35

1. Rewrite the note—"75%..... paper" as follows :  
"60% weightage be given to 'A' part and 40% to 'B' part while setting the question papers."

## APPENDIX—III

( *Ref. Res. No. 4(iv) of the Minutes* )

B.Sc. (Ag.) Part II

FARM MANAGEMENT AND STATISTICS

Page. 69

1. Delete 'functions' from the 2nd line and substitute 'economics' in its place.



## APPENDIX—IV

( *Ref. Res. No. 4(v) of the Minutes* )

## B Sc. (Ag ) Part III

## EXTENSION

Page. 79

1. Bifurcate para No, 1 into two. First para will include first line and 2nd will include rest of 4 lines.

Page. 80

1. Add 3rd para as follows: "Community development in India—Agriculture planning by Government. Community projects, N.E.S. blocks, their organization and working."
2. Delete "Extension..... Greece" from 2nd and 3rd lines of para 2nd.
3. Add the following para between 3rd and 4th para : "Role of extension workers, his qualities and duties. Ways of keeping the knowledge of extension workers up to date."
4. Add 'identification and' between 'their' and 'role' in the 4th para.
5. Delete 2nd and 3rd lines from para No. 9 'Principles.. .....education.'

Page. 79-80

1. Rewrite the 2nd para as follows : 'Extension services in Foreign countries'—U.S.A. and Greece.

Page. 81

1. Delete point No. 3.
2. Delete 'Programme.....work' from point No. 6.
3. Renumber items accordingly.

Page. 82

1. Delete "Demonstration" from point No. 9 Rest the whole para "At the .....demonstrations" may be inserted as a separate para under point No. 4.
2. Delete "They.....report" from the third line of Point No. 10

*Note* :—All changes have been made in the manuscript of the Syllabus prescribed for the exams. of 1981.

MINUTES OF THE MEETING OF THE ADHOC COMMITTEE  
OF COURSES IN GENERAL EDUCATION HELD ON  
19-11-1979 AT 12.00 NOON IN THE UNIVERSITY  
OFFICE, JAIPUR.

Present :

1. Shri U.S. Gaur (*Chairman*)
2. Prof. J.P. Tandon
3. Prof. S.C. Saxena
4. Shri Chand Mal Sharma
5. Dr. H.C. Bhartiya

*N.B. :—*1. Prof. R.C. Dwivedi, (Dean, Faculty of Arts) and Dr. M.S. Nigam could not attend the meeting.

2. In absence of Chairman Prof. R.C. Dwivedi, Prof. U.S. Gaur was unanimously requested to convene the meeting of the Committee for the day.

1. There is at present no panel of examiners. The University may write to the colleges where General Education is being taught to send up the names of teachers taking this subject. Preference in the appointment of examiners may be given to these who have been or are associated with the teaching of General Education.

2. The Committee offered no comments on the reports of examiners and question papers set for the examination of 1979.

3. The Committee recommended no change in the Courses of Study and text books in the subject for the following examinations :—

1. First Year T.D.C. (Pass) Course Examinations of 1982.
2. B.Sc. Hons. Pt. II Exam. of 1982.

4. The Committee noted the Resolution passed by the Academic Council vide its Res. No. 4 A (ii) dated the 15/16 May,

1979 regarding translation of the Syllabi for the various examinations in the subject in to Hindi Version and *resolved that* the translation work be entrusted to the Hindi Cell of the University.

5. With reference to Academic Council Res. No. 10 dated 1st June, 1979 and the Syndicate Res. No. 3 dated the 16th June, 1979 the Committee re-arranged the Courses of Study consequent upon abolition of Unit System.

6. With reference to the Academic Council Res. No. 14 dated 30-3-1979 the Committee considered a proposal regarding Population Policy and Syllabuses received from the Evaluation Officer, Association of Indian Universities, New Delhi. The Committee appreciated the suggestion that Population Policy be included in the syllabuses of courses of study. It, however, feels that it will not be enough to include it only in the General Education course as this course covers only a part of the student population. Necessary steps to implement this recommendation will have to be taken by various Boards of Studies, and once this is done there will be no need for this Committee to take any action.

7. It was observed that the current courses of study of nearly all the subjects at the Higher Secondary (and more particularly at the 10+2 level) have been given much wider spread over, and include nearly all that prescribed under the General Education syllabus. In view of this General Education as a separate course does not seem to have any significant relevance as a part of study at the under-graduate level.

It was also observed that if the purpose of the course was to increase the level of general awareness of the student about his environments, the course should *cover all the student population* and not only those who opt for it. The fact of its being an alternative of Ele. Mathematics/Ele. Biology/Hist. & Indian Culture takes away much of its meaning as General Education and gives it a stape of a specialised course, which was not the intention. As it is, the course books to be self-defeating in its purpose. Viewed in this light too, it has no relevance in its present form.

The management of the course of the co-ordination centre is a serious problem. It has been found almost impossible to obtain teachers from the concerned departments, and to fit them (after a series of changes) in the time table at two to three places. The result of this exercise has been very much less than satisfactory. A re-arranged staff is the only answer.

In this connection, it was also suggested that the syllabus be reviewed and then packed into 30 to 40 lectures (or discussions) to be handled by experienced teachers, and they be paid for organising the matter to be presented in the form and language suited to the level of comprehension of the students.

It was also suggested that lectures on well thought topics could be organised by the extension department of the University, turn by turn, in the University colleges. Instead of inviting only distinguished scholars and public men to address select gatherings, the extension department could take up the responsibility of increasing the awareness of the student body first and foremost, through lectures by University teachers and through other media it can manage to muster. Topics like Population Policy, Pollution, food and energy resources could be included in the extension lectures. Hence, it was pointed out, the opportunity for the adult education/extension wing to organise a co-operative effort and prove its usefulness. The University may like to help this wing to acquire capability in terms of staff & equipment, to come equal to the new challenge.

In view of all that is stated above, the University may like to get the question of continuance of General Education as a separate course, examined by a high level Committee.

The meeting ended with a vote of thanks to the chair.

Sd/-  
U.S. Gaur  
(Chairman)

MINUTES OF THE MEETING OF THE COMMITTEE OF  
COURSES IN MODERN EUROPEAN LANGUAGES  
HELD ON 18-10-79 AT 12.00 NOON IN THE VICE-  
CHANCELLOR'S SECRETARIAT, (NEW BUILD-  
ING), UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Dr. (Mrs.) P. Surana (Convener)
2. Shri Laxmikanta Das.
3. Shri Pradeep Kumar Seth  
Shri Tapan Sarkar (Special invitee)

1. The Committee scrutinised the statements of qualifications and teaching experience of teachers and *resolved that* teachers teaching the various foreign languages courses (German, French, and Russian) in different University colleges and University standard institutes of foreign languages may be appointed examiners in university examinations. The revised panel of examiners is available vide Appendices I, II and III.

2. The Committee *offered* no comments on the report of examiners and question papers set for the examinations of 1979.

3. The Committee *recommended* the courses of study and text book in the subject for the following examinations together with the relevant additions and/or alteration to the regulations and Ordinances. :—

I. Degree Examinations :—

- (a) First Year T.D.C. (Pass) Course Examination of 1982.
- (b) Second Year T.D.C. (Pass) Course Examination of 1982.

- (c) Third Year T.D.C. (Pass) course examination of 1982.

II. Certificate courses in foreign languages exam., 1982.

III. Diploma courses in foreign languages exam., 1982.

IV. Post-Diploma courses in foreign languages exam., 1982.

*Resolved that* the courses study in degree examinations should be treated as equivalent to the certificate, diploma and post-diploma courses in the University exam. as under :—

- |                          |              |
|--------------------------|--------------|
| (a) Certificate Courses  | 1st year TDC |
| (b) Diploma Courses      | 2nd year TDC |
| (c) Post-Diploma Courses | 3rd year TDC |

The Course of Study for all exams are appended as follows :—

- |                       |             |
|-----------------------|-------------|
| (i) French Courses    | Appendix IV |
| (ii) German courses   | Appendix V  |
| (iii) Russian courses | Appendix VI |

4. With reference to the Aca. Council Res. No. 4 A (ii) dated the 15/16th May, 1979 the committee *noted* the above and *observed* that the work of translation of syllabi into Hindi version is not applicable in the subject of foreign languages.

5. With reference to Academic Council Res. No. 10 dated the 1st June, 79 and the Syndicate Res. No. 3 dated the 16th June, 79. The Committee resolved that unit be deleted and it accordingly corrected the manuscripts of 1979 ed. of the syllabuses prescribed for the exam. of 1981 in the subject.

6. With reference to the Faculty of Arts Resolution No. 8, dated the 23.3.1979 the Committee considered the following Resolution received from the Evaluation Officer, Association of Indian Universities, New Delhi regarding introduction of

syllabus for population studies at the under-graduate level .—

“The Population policy of the Government of India was welcomed. It was noted that the agricultural universities had already recommended that population education be made a compulsory subject for their under-graduate courses. Resolved that a model syllabus for Population education be prepared and circulated to the Universities of adoption in their under-graduate curriculum.”

The Committee after discussions *noted the above resolution.*

7. The *Committee resolved* that the remuneration of examinations may be enhanced from the present rate of remunerations. The present rate of remuneration is lower than those prevalent in other universities as well as lower than the rate of remuneration of the degree examinations of this University.

The Committee further *resolved to recommend* that (i) the scale of setting of each question paper in certificate courses be Rs. 60/- and for setting each section of paper be Rs. 30/- and for setting question papers for Post-Diploma course be Rs. 75/- and for each section of papers be Rs. 37.50/-

(ii) For marking each answer-book @ Rs. 2/- for Certificate and Diploma and @ Rs. 2.50/- for Post-Diploma course.

(iii) For conducting Viva-voce examination the minimum rate should be Rs.60/- and the rate of each student should be Rs.2/- for certificate and diploma courses and the rate of conducting Viva-voce of Post diploma should be Rs. 75/-and the rate of each student should be Rs. 2.50/-

The meeting ended with a vote of thanks to the chair.

(Mrs. Pawan Surana )

*Convener*

## APPENDIX-I

(Ref. Res. No. 1 of the minutes)

## Revised Panel of Examiners in French.

*Internal :*

1. L.K. Das  
Rajasthan University, Jaipur.
2. P.K. Seth  
Banasthali Vidyapeeth, Banasthali.

*External :—*

1. Dr. P.K. Jha, Reader in French, Banaras Hindu University, Varanasi.
2. Dr. N.D. Ghose, Lecturer in French, Kurukshetra University, Kurukshetra.
3. Dr. B.C. Das, Lecturer in French, Burdwan University, Burdwan.
4. H.N. Das, Lecturer in French, Banaras Hindu University, Varanasi.
5. Joseph Biswas, Lecturer in French, Allahabad University, Allahabad.
6. Dr. V.V. Jain, Lecturer in French, Lucknow University, Lucknow.



## APPENDIX-II

*(Ref. Res. No. 1 of the minutes)*

Revised Panel of Examiners in German.

*Internal*

1. Dr. (Mrs.) Pawan Surana : Lecturer in German, University of Rajasthan, Jaipur.
2. Munish Kumar Pandey : Lecturer in German, Subodh College, Jaipur.

*External :*

1. Dr. S. Upadhyay : Reader in German, BHU Varanasi-5.
2. Dr. V. Ganeshan : Reader in German, CIEFL Hyderabad, A.P.
3. Prof. M.S. Karmarkar : UGC Prof. in German, F.11/near Post Office B.H.U. Varanasi-5.
4. Prof. Pramod Talgeri : Deptt. of German, J.N.U. New-Delhi.
5. Dr. Wolfgang Adam : Reader in German, Deptt. of German, University of Kerala, Trivandrum-695001
6. Frau Dr. Winterich : Guest Lecturer in Deptt. of German, JNU, New Delhi.
7. (Mrs.) Sahashrabudhe : Lecturer in German, Max Mueller Bhawan, Boat Club Road, Poona.

## APPENDIX-III

(Ref. Res. No. 1 of the minutes)

Panel of Examiners in Russian.

*Internal :*

1. Tapan Sarkar  
Lec. in Russian  
Rajasthan University,  
Jaipur.

*External :*

1. Prof. C.N. Chakravarti,  
Centre of Russian Studies,  
Jawaharlal Nehru University,  
New Delhi-67.
2. Amar Basu,  
Centre of Russian Studies,  
JNU, New-Delhi.
3. Hem Chandra Pande  
Centre of Russian Studies  
JNU, Delhi.
4. Prem Sagar Sharma,  
Head, Russian Language Deptt.,  
Guru Nanak Dev University,  
Amritsar, Punjab.
5. Vipin Bihari Lal Mathur,  
Head, Russian Language Deptt.,  
Kurukshetra University,  
Haryana.
6. Rajeev Sharma,  
Head, Deptt. of Russian Language,  
Institute of Foreign Language,  
Srinagar, J&K.

## APPENDIX-IV

(Ref. Res. No. 3 of the Minutes)

## (FRENCH)

## First Year Examination (Certificate Course)

## Paper I (2 hours).

(a) Translation from French to English from the text.	..	25
(b) Translation from English to French from the text.	..	25
(c) Grammar	..	30
		<hr/>
		80
		<hr/>

## Paper II

## Part I (1½ hours.)

(a) Questions from text	....	30
(b) Paragraph writing	....	20
		<hr/>
		50
		<hr/>

## Part II (3 minutes)

(a) Dictation	....	30
---------------	------	----

## Paper III

(a) Viva.-voce	....	40
----------------	------	----

Text Book	I. G. Mauger	—Cours de langue et de Civilisation françaises-I. (Lessons 1—35).
	II. Larousse	—French Dictionary from French to English and English to French.

## Second Year Examination (Diploma Course). French

## Paper I (2½ hours).

(a) Questions from the text	....	30
(b) Grammar	....	40
		<hr/>
		70
		<hr/>

## Paper II (2½ hours).

- |  |    |  |
|--|----|--|
| (a) Translation from French to English | 40 | } unseen passages based on the grammar of the text as far as possible<br>Dictionary is allowed |
| (b) Translation from English to French | 40 |  |
|  | 80 |  |

## Paper III (2½ hours).

- |   |    |    |
|---|----|----|
| (a) Questions from the unseen passage                                   | .. | 30 |
| (b) Essay (based on the text as far as possible and very common topics) | .. | 40 |
|   |    | 70 |
|   |    | —  |

## Paper IV

- |                |    |    |
|----------------|----|----|
| (a) Viva-Voce. | .. | 80 |
|----------------|----|----|

Text Book : 1. G. Mauger

—Cours de langue et de civilisation françaises-I (Lessons 36—65).

2. Essential French

—Manak Paranjape. (JNU)

3. Larousse.

—French Dictionary from French to English and English to French.

## Post Diploma Course in French

## Paper I

100 marks

3 hrs.

- |  |  |
|--|--|
| (a) Translation from French to English | } Dictionary is allowed in the examination hall. |
| (b) Translation from English to French |  |

Text : G. Mauger-Cours de langue et de civilisation françaises-II Dictionary Larousse English to French, French to English Lessons -1-50.

## Paper II

100 marks

3 hours

- (a) History of literature

60 Marks

Three questions (one from each age) are to be answered:

- (1) Classical age (with special references to Corneille, Racine, Moliere, La Fontaine)

(2) Romantic age (with special references to Lamartine, Vigny, Hugo, Musset) and Alfred devigny.

(3) Modern age (With special references to Baudelaire, Zola, Maupassant, Camus, Sartre)

(b) Comprehension 40 Marks

Paper III 100 marks 3 hrs.

(Two questions are to be answered)

(a) Poetry : 40

Ronsard, 2. La Fontaine, 3. Lamartine, 4. Vigny, 5. Victor Hugo, 6. Musset, 7. Baudelaire, 8. Rimbaud, 9. Verlaine, 10. Mallarme.

(One poem from each poet, names to poems to be selected later)

(one question is to be answered)

(b) Drama : 30  
Le Cid-Pierre Corneille

(One question is to be answered)

(c) Prose : 30  
L'Etranger-Albert Camus  
Viva voce 100 marks

## APPENDIX-V

*(Ref. Res. No. 3 of the minutes)*

Modern European Language Examination,

(GERMAN)

First Year Examination :

(Certificate Course)

Paper I (Two Hours)

(a) Translation from German to English or Hindi	20 marks
(b) Translation from English to Hindi to German	10 marks
(c) Dictation (Half an Hour)	30 marks
Total	60 marks

Paper II (Two Hours)

(a) Grammar	40 marks
(b) German Text to sum up	35 marks
(c) Questions from the Text	25 marks

(Note :—Unseen passage for summary and Translation must be based on the vocabulary taught in the text.)

Total 100 marks

Paper III

(a) Viva-Voce	40 marks
---------------	----------

Grand Total 200 marks

IIInd Year Examination, 1981.  
(Diploma Course)

Paper I (Three Hours)

(a) Translation from German to English or Hindi.	45 marks
(b) Translation from English into German	30 marks
	75 marks

(Passages are unseen, dictionary is allowed)

**Paper II (Three Hours)**

(a) Grammar	45 marks
(b) Questions from the given text	30 marks
Total	75 marks

**Paper III (Two Hours)**

(a) Essay (about 250 words, (one topic to be selected out of five)	50 marks
---	----------

**Paper IV**

Viva-Voce	100 marks
Grand Total	300 marks

**Text Books Prescribed :—**

1. Deutsche Sprachlehre für Ausländer von Schulz—Giesbach (page 1-108 for Certificate course).
2. Deutsche—Sprachlehre für Ausländer von Schulz—Griesbach (Page 108--208 for Diploma Course)

**Books Recommended :—**

- (a) Deutsch als Fremdsprache I von Braun—Nieder—Schmoe
- (b) Deutsch als Fremdsprache II Von Braun—Nieder—Schmoe,
- (c) Im Wandel der Jahre von Harold von Hofe.

**Post Diploma Course in German**

**Paper I Translation (three hours-Duration)**

1. Translation from German into English or in Hindi	70 marks
2. Translation from English into German	30 mark
Total.	100 marks

**Paper II Literature (three hours-Duration)**

1. Explanation of a prescribed German poem in simple German or questions on the poem	30 marks
--	----------

2.	Two Questions out of four given questions on the prescribed play (20 marks each)	40 marks
3.	Questions from given text of one of the prescribed short stories	30 marks
Total Marks		100 marks

Paper III (Three hours duration).

1.	Unseen Passage and its summary or question on above passage	30 marks
2.	Two Questions to be answered on History of German Literature out of four given Questions (To be answered in German or in Hindi or in English)	30 marks
3.	Grammar	40 marks
Total Marks		100 marks

Paper III Viva Voce

1.	Unseen Passage and its summary or questions on above text	50 mark
2.	Conversation including questions on German Literature and culture etc.	50 marks
Total		100 marks

*Books Prescribed :*

1. Deutsche Erzählungen von Klier/Martin (Teill)
2. Biedermann und die Brandstifter-Max Frisch
3. Gedichte :
  - (i) Drei Ringe-Lessing
  - (ii) Abendlied-Mattias Claudius
  - (iii) Wanderers Nachtlied-Wolfgang von Goethe
  - (iv) Die Burgscheaft-Friedrich von Schiller
  - (v) Mondnacht-Joseph von Eichendorff
  - (vi) Lorelei-Heinrich Heine
  - (vii) Der Vogel-Wibhem Busch

*Books recommended :*

- (i) Aus deutscher Dichtung
- (ii) Deutsche Gegenwart
- (iii) Begegnung mit Deutschland—by Blohrn /Kopke
- (iv) Grammatik der deutschen Sprache by Schulz—Griesbach
- (v) Erzählung und Gedichte—Hans Eicke
- (vi) History of German Literature by Werner Friedrich



## APPENDIX-VI

(Ref. Res. No. 3 of the minutes)

## RUSSIAN

## (First Year) Certificate Course.

<i>Time 2 hours.</i>	<i>Paper-I</i>	<i>Max-marks-75</i>
(a) Translation from English to Russian		20
(b) Translation from Russian to English (Dictionary allowed in the exams.)		30
(c) Dictation (Half an hour)		25
	Total—	75

<i>Time 2 hours</i>	<i>Paper-II</i>	<i>Max. marks-75</i>
(a) Grammar : to complete the endings of nouns, pronouns, adjectives, nume- rals with or without prepositions, the endings of verb conjugations.		40
(b) Questions from unseen passages		15
(c) Paragraph writing.		20
	Total—	75

<i>Time 2 hours</i>	<i>Paper-III</i>	<i>Max. marks-75</i>
(a) Viva-voce		50
	Grant Total—	200

## (Second Year) Diploma Course.

<i>Time 2 hours</i>	<i>Paper-I</i>	<i>Max. marks.-75</i>
(a) Translation from Russian into English		45
(b) Translation from English into Russian (Dictionary allowed in the exam.)		30
	Total	75

<i>Time 2 hours</i>	<i>Paper-II</i>	<i>Max. marks-75</i>
(a) Grammar.		50
(b) Question from the text.		25
	Total	75

Time 2 hours

Paper-III

Max. marks-50

- (a) Essay writing in 200 to 250 words minimum.

50

- (a) Viva-voce

Paper-IV

Max. marks  
100

Grand Total

300

(Post Diploma Course in Russian)

Time 3 hours

Paper-I

Max. marks-100

(Translation)

- (a) Translation from Russian into English: 60  
Hindi.

- (b) Translation from English/Hindi into 40  
Russian.

(Dictionary allowed in the exam.)

Total 100

Time 3 hours

Paper-II

Max. marks-100

- (a) Grammar.

70

- (b) Precis writing

30

Total 100

Time 3 hours

Paper-III

Max. marks-100

- (a) Essay on current topics or daily life. 60  
Question for Russian literature 40  
(XIXth Century Russian literature,  
To answer one out of three  
questions)

Total 100

Paper-IV

Max. Marks-100

- (a) Viva-voce

- (1) Reading of an unknown over text 40  
Summarize and questions on it.

(2) Conversation	40
(3) Questions on Russian Literature (XIXth and XXth Century)	20
Total	<u>100</u>

Grand Total                      400

*Text books prescribed and books recommended.*

1. Russian. By Wagner and Ovsienko.  
(1 to 31 Lessons for Ist year Certificate course,  
(32 to 62 Lessons for IInd year Diploma course)
2. Learning Russian, By Nina Potapova.  
(1 to 4 volumes)
3. Russian in exercises By Khavronina and Shirochenskaya.
4. Russian grammar. By Pulkina
5. Russian Literature, By C.N. Chakravarty
6. Khrestomatia po Russkomu iazyku. By A.F. Konopelkin.
7. Russian phonetics, By C.N. Chakravarti and G.S. Anysimova.
8. Russian-English Dictionary By Akhmanova, Ed.
9. English-Russian Dictionary, By Muller.
10. USSR : Questions and answers. (In English)
11. USSR—1980.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN PSYCHOLOGY HELD ON THE 15TH/16TH AND 17TH  
OCT., 1979 AT 12.00 NOON AND 9.00 A.M. RESPECTI-  
VELY IN THE VICE-CHANCELLOR'S SECRETARIA-  
T (NEW BUILDING), UNIV., CAMPUS  
JAIPUR.

Present :

1. Prof. S.N. Sinha, (Convener)
  2. (Mrs.) Nirmal Mathur,
  3. Shri S.C. Prasad,
  4. Dr. K.N. Sharma.
- (Mrs. S. Gupta, Dr. L.B. Tripathi and Dr. Arun Kumar Sen could not attend the meeting.)

1. Under Section 34(4) (iv) of the University Act, the Board Unanimously elected Shri S.C. Prasad, Lect. in Psychology Deptt., University of Rajasthan, Jaipur as member other than the Convener to serve on the Committee for selection of examiners for the year 1979-80.

2. The Board scrutinised the statement of qualifications and teaching experience of teachers from University Teaching Deptt., University Colleges, Affiliated Institutions and other universities for inclusion in the panel, and revised the accordingly in terms of panel S.25 (2) (a).

3. The Board perused the report of examiners and question-papers set for the various examination of 1979 and resolved as follow :—

- (i) *For B.A. (Hons.) Pt. III paper VIII "Mental Measurement"* : The Head of the Deptt. may be requested to inform the teacher. Students need clarity of the basic concepts.
- (ii) *M.A. I & II<sup>nd</sup> Semester; paper II (B)* : the Head of the Deptt. may be requested to inform the teachers to tell the students about the basic concepts as they were not aware about them.

- (iii) *M A. III and IVth (Semester) paper I (Gr. B) Part B :*  
The Head of the Deptt. be requested to inform the teachers that the general performance of the students is not very satisfactory, and teaching should be done more extensively with critical appreciation.

4. The Board *recommended* that the existing courses of study and text books in the subject for the following examinations as contained in 1979 edn. of the syllabus together with minor relevant additions and/or alterations be repeated :-

- |   |  |
|---|--|
| I. Pre-University Examinations of 1982-                   | No Change.   |
| II. Degree Examinations :                                 |  |
| (a) First Year T.D.C. (Pass) course Examination of 1982.  | As per Appendix-I  |
| (b) Second Year T.D.C. (Pass) course Examination of 1982. | As per Appendix-II   |
| (c) Final Year T.D.C. (Pass) course Examination of 1982.  | As per Appendix-III  |
| III. Honours Examinations :                               |  |
| (a) Part I Exam. of 1982.                                 | } No Change  |
| (b) Part II Exam. of 1982.                                |  |
| (c) Part III Exam. of 1982.                               |  |
| IV. Post-Graduate Examinations :                          |  |
| (a) Previous Exam. of 1982                                | No change  |
| (b) Final Exam. of 1983                                   | No. Change.  |
| V. M.Phil. Examination                                    | As per Appendix-IV for the exam. of 1981 and for 1982 examination. |

5. With reference to Ac. Council Res. No. 4A(ii) dated the 15/16th May, 1979, the Board translated the syllabus into Hindi version and submitted to the office.

6. It was reported to the Board that the Ac. Council vide its Res. No. 14 dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing

Education as contained in his letter No. D-3/64, dated the 24th Dec., 1978 to that effect that the students of M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final examination and *resolved that :-*

- (i) The facility of offering viva-voce be permitted to the students of correspondence studies for the exam. of 1979, be also extended the M.A./M.Com. Exam. of 1980.
- (ii) In respect of the matter of allowing candidates to appear viva-voce; the collegiate, the non-collegiate and the student of Correspondence Institute be treated at par, an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper wherever necessary be referred to the Board of Studies under the purview of the faculty where the viva-voce is permissible.

The Board *noted* that the above proposal as it is not applicable in the subject of Psychology.

7. It was reported to the Board that the council vide its Res. No. 10(i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., 1978 reg. introduction of viva-voce in Dissertation for the M.A. Hindi Examination, and resolved as follows :-

- (i) The matter regarding introduction of viva-voce Dissertation for M.A. Hindi Examination be referred for consideration to the Board of Studies in Hindi with the observation of the Council that it may consider abolition of the provision of dissertation at the M.A. Hindi Exam. and if so, it may consider incorporation of an alternative paper in its place, if necessary.
- (ii) A similar reference be also made to the Board of Studies where dissertation forms a part of the Courses of study for the M.A. Examination to examine the feasibility of abolition by the provision of dissertation and providing alternative paper in its place, if necessary.

The Board accordingly considered the matter and *resolved* as under :-

- (i) Viva-voce examination should continue in the M.A. final dissertation in Psychology.
- (ii) There is no need to abolish the M.A. (Final) dissertation, in view of the fact that only those students securing 55% or above in the M.A. (Prev.) Exam. are eligible to offer the same.

8. With reference to the Faculty Resolution No. 4 dated the 28.3.79 to consider the following Resolution received from the Evaluation Officer, Association of Indian Universities, New Delhi regarding introduction of syllabus for population studies at the Under Graduate level :—

“The population Policy of the Government of India was welcomed. It was noted that the agricultural universities had already recommended that population education be made a compulsory subject for their Under-Graduate courses. Resolved that a model syllabus for population and education be prepared and circulated to the universities for adoption in their undergraduate curriculum.

Accordingly the Board considered the aforesaid proposal together with the syllabus and the Board observed that the topic of population problem is already being taught at the under-graduate level.

The meeting ended with a vote of thanks to the chair.

(S.N. Sinha)  
Convener.

## APPENDIX-I

(Ref: Res. No.4 (II) (a) of the Minutes)

Degree Exam.

Ist Year T.D.C. :

1. Introduction—definition, nature, methods, scope.
2. Motivation—Indications of motivated behaviour, kinds of motives, frustration and conflict.
3. Feeling and emotion—Significance of emotions in life, control of emotions, expression of emotions, emotions and feeling, bodily changes in emotion, James Lange and Cannon Bard theories of emotion.
4. Personality—nature, determinants: bodily, social, cultural, traits, types, development of personality, measurement—all methods.
5. Perception and attention—Analysis of perception, characteristics of perception, Gestalt theory, illusion; kinds and causes, kinds of attention, conditions, determinants, fluctuation, distraction of attention.
6. Learning—nature, Theories : Connectionism, insight, conditioned reflex, learning and maturation, learning and motivation, factors of learning: psychological, physiological, social, learning curve.
7. Remembering and forgetting : Stages, conditions favouring retention and recall, economical methods of memorization, nature of forgetting, causes of forgetting.
8. Intelligence—Definition, nature, development of intelligence tests, forms of intelligence tests.
9. Response mechanism : receptor, effector, adjuster, (nervous system)

*Books for reference*

1. रामनाथ शर्मा—सामान्य मनोविज्ञान की रूप रेखा, केदारनाथ रामनाथ, मेरठ, 1979-80 ।
2. रामकुमार राय—सामान्य मनोविज्ञान, भाग 1 व 2, परिचय प्रकाशन, वाराणसी ।
3. Morgan, C.T. and King, R.A. Introduction to Psychology Mc Graw-Hill.



4. Hilgard, E.R. and Atkinson, R.S. Introduction to Psychology, N.Y., Harcourt Brace.

### परिशिष्ट I

( हिन्दी रूपान्तर )

प्रथम वर्ष ( त्रिवर्षीय डिग्री पाठ्यक्रम )

प्रथम पत्र—सामान्य मनोविज्ञान

1. विषय प्रवेश—मनोविज्ञान की परिभाषा, प्रकृति, पद्धतियाँ ।
2. प्रेरणा—प्रेरणायुक्त व्यवहार के लक्षण, प्रेरणा के प्रकार, कुंठा तथा अन्तर्द्वन्द्व ।
3. संवेग और स्थाई भाव—जीवन में संवेगों का महत्व, संवेग नियन्त्रण, संवेग अभिव्यक्ति, संवेग तथा स्थाई भाव, संवेग का शरीर पर प्रभाव, जेम्स लैन्ज तथा कैनन-वाड के संवेग सिद्धान्त
4. व्यक्तित्व—प्रकृति, निर्धारक—शारीरिक, सामाजिक, सांस्कृतिक, शीलगुण, प्ररूप व्यक्तित्व विकास, व्यक्तित्वमापन—सभी विधियाँ ।
5. प्रत्यक्षज्ञान तथा ध्यान—प्रत्यक्षज्ञान का विश्लेषण, प्रत्यक्ष ज्ञान की विशेषतायें, गेस्टाल्ट सिद्धान्त, विपर्ययः प्रकार और कारण, ध्यान के प्रकार, ध्यान की दशायें एवं निर्धारक, ध्यान विचलन, अनवधान ।
6. अधिगम—प्रकृति, अधिगम सिद्धान्त : संयोजनवाद, अंतर्दर्शन, अनुकूलित प्रतिवर्त, अधिगम तथा परिपक्वण, अधिगम तथा प्रेरणा, अधिगम के कारकः मनोवैज्ञानिक, शारीरिक, सामाजिक, अधिगम वक्र ।
7. स्मृति तथा विस्मरण : दशायें, धारण एवं प्रत्यस्मरण में सहायक दशायें, स्मरण की भित्तव्ययी विधियाँ, विस्मरण के कारण ।
8. बुद्धि—परिभाषा, प्रकृति, बुद्धि परीक्षण विकास ।
9. अनुक्रिया संरचना—संग्राहक, प्रभावक, संयोजक (स्नायु संस्थान)

### I Year Practical :

1. Human Sensory-motor learning process.
2. Memory of meaningful and meaningless stimuli
3. Judgement of emotion from facial expression
4. Assessing intelligence with a battery of performance test.
5. Assessing personality adjustment.

*Books for reference :*

1-3 as in previous syllabus. (Add)

(4) श्यामस्वरूप जलोटा—मनोविज्ञान के प्रयोगिक क्षेत्र, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर ।

प्रथम वर्ष :—द्वितीय पत्र प्रयोग

1. मानव संवेदी गत्यात्मक अधिगम प्रक्रिया ।
2. सार्यक एवं निर्यक उद्दीपकों की स्मृति ।
3. सुखाकृति द्वारा संवेगों का निर्णय ।
4. क्रियात्मक परीक्षण बैटरी द्वारा बुद्धि मापन ।
5. व्यक्तित्व समायोजन का मापन ।

## APPENDIX-II

(Ref: Res.: No.4 II 2 (b) of the Minutes)

IInd Year T.D.C. :

Paper I—Abnormal Psychology.

1. Criteria and Concept of abnormality
2. Causes of abnormal behaviour
3. Motivation and adjustment
4. Mental mechanisms and symptoms
5. Psychoanalytic concept of personality
6. Psychoneuroses : Anxiety, Hysteria, neurosthenia, obsessive compulsive neurosis.
7. Psychoses: Schizophrenia, manic depressive psychosis, paranoia.
8. Mental deficiency.
9. Alcoholic mental disorders.
10. Causes and theories of crime and delinquency, their remedies.

*Books for reference :*

1. रामनाथ शर्मा—असमान्य मनोविज्ञान की रूप रेखा, केदारनाथ रामनाथ मेरठ ।
2. जयगोपाल त्रिपाठी—असमान्य मनोविज्ञान, वंशगोपाल त्रिपाठी व विगनकुमार गुप्त, अलीगढ़ ।
3. J.D. Page—Abnormal psychology, Tata Mc. Graw-Hill, N.D.

प्रथम पत्र—असमान्य मनोविज्ञान

1. असमान्य मनोविज्ञान के निकृष्ट एवं संप्रत्यय
2. असमान्य व्यवहार के कारण
3. प्रेरणा एवं समायोजन
4. मानसिक मनोरचनाएँ एवं लक्षण
5. व्यक्तित्व का मनोविश्लेषणात्मक संप्रत्यय
6. मनोस्नायु विकृतियाँ : चिन्ता, उन्माद अस्तता, न्यूरेस्थेनियाँ, अस्तताएँ और बाध्यताएँ
7. मनोविकृतियाँ, मनोविदलता, उत्साह विषाद, मनोविकृति व्यामोह
8. मानसिक दुर्बलता
9. मध्यजन्यतिक्रम मानसिक विकार

10. अपराध एवं किशोरापराध के कारण एवं सिद्धान्त, सुधार के उपाय ।

#### Paper II—Psychological statistics

1. Formulation of hypothesis
2. Independent and dependent variables.
3. Control of the experiment
4. Measures of central tendency—means (long and short method), median, mode.
5. Measures of variability (Range Quartile deviation, average deviation, standard deviation (long and short methods).
6. Sampling.
7. Standard error of mean, test, significance of difference between two means.
8. Chi Square test : equal probability hypothesis, 2X2 contingency tables, Yates, correction.
9. Correlation by ranks.

#### *Books for reference :*

1. पारसनाथ राय तथा चांद भटनागर—अनुसंधान परिचय, लक्ष्मी नारायण अग्रवाल, आगरा ।
2. जे. एन. लाल एवं गिरीश्वर मिश्र—मनोविज्ञान सांख्यिकी पुस्तक स्थान, गोरखपुर ।
3. H.E. Garrett, Statistics in Psychology and Education (Indian Ed.)
4. Townsend, T.C. An introduction to experimental method.

#### Paper III—Practical

No. changes in Practicals.

#### *Books for reference :*

1. श्यामस्वरूप जलोटा—मनोविज्ञान के प्रायोगिक क्षेत्र, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर ।
2. प्रीति वर्मा तथा डी० एन० श्रीवास्तव—आधुनिक प्रयोगात्मक मनोविज्ञान, विनोद पुस्तक मन्दिर, आगरा ।
3. निर्मल सक्सेना तथा महेश भार्गव—मनोविज्ञान में मापन, मूल्यांकन एवं प्रयोग, राष्ट्रीय मनोविज्ञान कारपोरेशन आगरा ।
4. S.M. Mohsin—Experiments in psychology, Orient Longmans, Bombay.

### द्वितीय पत्र—मनोवैज्ञानिक सांख्यिकी

1. उपकल्पना निर्माण
2. स्वतन्त्र एवं परतन्त्र चर
3. प्रयोग में नियन्त्रण
4. केन्द्रीय प्रवृत्ति के माप—मध्यमान (लम्बी एवं संक्षिप्त विधि)  
मध्यांक, बहुलांक।
5. विचलन के माप—प्रसार, चतुर्थांश विचलन, औसत विचलन  
(लम्बी तथा संक्षिप्त विधि)
6. प्रतिचयन
7. मध्यमान की प्रमानक त्रुटि, टी परीक्षण, दो मध्यमानान्तरों में  
सार्यकता।
8. काई वर्ग परीक्षण : समान संभावना उपकल्पना,  $2 \times 2$  संभाव्यता  
तालिका
9. कोटि-क्रम सहसम्बन्ध

## APPENDIX-III

(Ref: Res. No. 4 II (C) of the Minutes)

IIIrd Year T.D.C. :

Paper I—Social Psychology.

1. Scope and methods of social psychology
2. Socialization
3. Groups
4. Attitudes: Nature, determinants, measurement.
5. Public Opinion
6. Social norms, status and roles.
7. Mass behaviour : Crowds & audiences
8. Prejudice
9. Propaganda & rumour
10. Leadership and morale
11. Culture and personality
12. Group tensions & Social conflict.

*Books for reference :*

1. रामनाथ शर्मा—समाज मनोविज्ञान की रूपरेखा, केदार नाथ रामनाथ, मेरठ।
2. हंसराज भाटिया—समाज मनोविज्ञान
3. H.R. Bhatia—Social Psychology.

## परिशिष्ट III

(तृतीय वर्ष त्रिवर्षीय डिग्री पाठ्यक्रम)

प्रथम पत्र—समाज मनोविज्ञान

1. क्षेत्र एवं समाज मनोविज्ञान की विधियाँ
2. समाजीकरण
3. समूह
4. अभिवृत्ति—स्वरूप, निर्धारक, मापन
5. जनमत
6. सामाजिक मानक, पद तथा भूमिकाएँ
7. जनव्यवहार—भीड़ एवं श्रोतागण
8. पूर्वग्रह
9. प्रचार एवं जनप्रवाद
10. नेतृत्व एवं मनोबल

11. संस्कृति तथा व्यक्तित्व
12. सामूहिक तनाव एवं सामाजिक संघर्ष

संदर्भ पुस्तक :—

1. रामनाथ शर्मा—समाज मनोविज्ञान की रूपरेखा, केदार नाथ रामनाथ, मेरठ ।
2. हंस राज भाटिया —समाज मनोविज्ञान
3. H.R. Bhatia -- Social Psychology.

OR

III Year T.D.C.

Child Psychology

Paper—I

1. Child Psychology : nature, scope, Importance of Child Study, methods of Child Study.
2. Biological and Cultural factors of child development.
3. Maturation and learning: meaning & significance of maturation, theories & laws of learning, Characteristics of learning in a child.
4. Development of understanding: components of understanding, formation of percepts & concepts. Thinking process, stages in the development of understanding.
5. Imagination, Interest & Attention: Value of Imagination, Expression of imagination—day dreaming, fantasy, & Creativity. Definition of Attention, forms. Relation between Interest and attention.
6. Development of Emotion—Characteristics of childhood emotions.
7. Motivation of Child behaviour : child's basic needs, motivation and learning. Conflict and Role of conflict in the child's development.
8. Self and personality: Meaning of self and personality, Types of personality, factors of good personality. Development and Improvement of personality.
9. Problems of Children ; Thumb-sucking, Nail-biting, Enuresis, Shyness, Left handedness, Temper Tantrums speech disorder-stuttering and stammering, Destructive Behaviour.

*Books :*

1. Hurlock, Child development—
2. Cameron—Psychology of Behavior disorders.
3. L.D. Crow & Alice Crow—Child development and adjustment.
4. Thompson G.G.—Child Psychology.

राज राजेश्वरी प्रसाद सिन्हा—विकासात्मक बाल मनोविज्ञान, भारती

भवन

एम.ए. गाह; विकासात्मक बाल मनोविज्ञान

तृतीयवर्ष

प्रथम पत्र—बाल मनोविज्ञान

1. बाल मनोविज्ञान—स्वरूप, क्षेत्र, बाल अध्ययन का महत्व, बाल अध्ययन की विधियाँ।
2. बाल विकास के जैविक एवं सांस्कृतिक तत्व।
3. परिपक्वता एवं अविगम, परिपक्वता का अर्थ एवं महत्व, अविगम के सिद्धांत एवं नियम, बालकों में सीखने की विशेषताएँ।
4. सूक्ष्म का विकास, सूक्ष्म का कारक, प्रत्यय एवं प्रत्यक्ष का निर्माण, चिंतन प्रक्रिया, सूक्ष्म के विकास की अवस्थाएँ।
5. कल्पना, रुचि एवं ध्यान, कल्पना की मूल्य, कल्पना की अभिव्यक्ति, दिवास्वप्न, स्वैर कल्पना एवं सर्जनात्मकता, ध्यान की परिभाषा, प्रकार, रुचि एवं ध्यान में सम्बन्ध।
6. संवेग का विकास—बाल अवस्था के संवेगों की विशेषता।
7. बाल व्यवहार के अभिप्रेरणा, बालकों की प्राथमिक आवश्यकता, अभिप्रेरणा एवं अविगम, द्वन्द्व, बच्चों के विकास में द्वन्द्व की भूमिका।
8. आत्म एवं व्यक्तित्व, आत्म एवं व्यक्तित्व का अर्थ, व्यक्तित्व के प्रकार, अच्छे व्यक्तित्व के कारक, व्यक्तित्व का विकास एवं सुधार।
9. बालकों की समस्याएँ, अंगूठा चूसना, नाखुन कुतरना।

अनियंत्रित मूत्र प्रवाह, शर्म, दान् हस्तता, अतिशय मचलना, वाक् दोष—तुतलाना एवं हकनाना, विध्वंसकारी व्यवहार।



**PSYCHOLOGY***Scheme :*

Min. Pass marks 36 : Max. marks 100

Paper II—Practical (Experiments) 100 Marks

*Syllabus :***Paper II—Experiments in Social Psychology :**

1. Bogardus Social Distance Scale
2. Study of Values.
3. Level of aspiration.
4. F. Scale.

Or

**Experiments in Child Psychology :**

1. Problem Solving Puzzles.
2. Transfer of Training.
3. Social Maturity of Child.
4. Interest Pattern of Children.

AND

**Experiments in General Psychology :**

The candidate should perform following experiments in the Laboratory :

Reaction Time (Simple Vs. Complex) Conditioning (Simple conditioning principles) Phi-phenomenon, Aesthesiometric Index (J.N.D.), Fluctuation of Attention Concept Formation/ Multiple Choice, Retroactive Inhibition and pneumograph.

*Books recommended :*

1. Laboratory Manual : Munn, N.L.
2. Manual of Experimental Psychology : Parmeshwaran
3. Postman and Egan : Experimental Psychology.

## APPENDIX-IV

*(Ref: Res. No. 4 (V) of the Minutes)*

M.Phil. Course, 1981 :

*Scheme :*

There will be three papers of the core subject, one of which will be optional (to be selected either II A or II 'B' or II 'C' paper) plus dissertation equal to two papers (relates to the optional paper offered.)

Compulsory paper :

Paper I—Methodological Foundations of Behavioural research.

1. Basic issues in theory construction and development of models in psychology.
  - (i) Psychological explanations of behavioural phenomenon.
  - (ii) Overviews of theory of data and applications of unfolding theory.
2. Statistical inferences
  - (i) Estimation and tests of hypotheses
  - (ii) Bayesian methods
3. Design and conduct of quasi experiments
4. Design and analysis of single factor and multifactor experiments.
5. Latin Square Design and related designs
6. Object-cluster analysis methods
7. Discriminant functions for two groups, Multiple Discriminant Analysis,
8. Factor analysis : methods of extraction, rotations—orthogonal, oblique, factor scores, factorial invariance.
9. Use of Canonical variates of classification.
10. Multiple regression analysis.

*Books for reference :*

1. Robert Borger and Frank Chioffi (Eds.) *Explanation in the behavioural sciences*, Cambridge University Press, London, 1978.
2. Marvin D. Dennette (Ed.) *Hand Book of Industrial and Organizational Psychology*, Rand Mc Nally, Chicago 1976.

3. John E. Overall and C. James Klett. Applied Multivariate Analysis. Mc Graw-Hill, N.Y., 1972.
4. Stanley A. Mulaik. The Foundations of Factor Analysis. Mc Graw Hill, N.Y. 1972.
5. Harol J. Larson. Introduction to Probability Theory and Statistical Inference, John Wiley, N.Y., 1974.
6. B.J. Winer, Statistical Principles in Experimental Design, Mc Graw Hill, N.Y., 1971.
7. Clyde H. Coombs. A Theory of Data, John Wiley, N.Y., 1964.
8. Robert C. Tryon and Daniel E. Bailey. Mc Graw-Hill, N.Y., 1970.

### Optional papers

Paper II— (A) Organizational Psychology  
(As in syllabus 1978 on pp. 34-35)

#### *Books for reference :*

Book No. 3 to be deleted (removed) from syllabus as it is not available.

The following book is suggested.

- (3) Marvin D. Dunnette (Ed.) Handbook of Industrial and Organizational Psychology. Rand Mc Nally, Chicago, 1976.

Paper II (B)—Ecological Psychology :

1. Conceptual, theoretical and methodological issues.
2. Ecological factor in cognition development, Perceptual processes, thought processes, intelligence, creativity.
3. Errors in cognitive mapping.
4. Environmental coping & general incongruity adaptation level.
5. Social accomodation : Social isolation, invasion of privacy, and self disclosure, altruism.
6. Development under aversive conditions.
7. Ecological perspectives in cross-cultural psychology.
8. Cognitive complexity: Theory and measurement.
9. Interactive complexity theory.
10. Consistency, and motivation basic models.
11. Implications for the field of environment and behaviour.

#### *Books for references :*

1. Harry Mc Gurk (Ed.) Ecological Factors in Human, North-Holand Publishing, Amsterdam, 1977.

2. Charles J. Holahan. Environment and Behaviour. Plenum Press, N.Y., 1978.
3. Siegfried Streufert and Susan C. Streufert, John Wiley, N.Y., 1978.

#### Paper II (C)—Community Psychology:

1. Origin and historical context of community psychology.
2. Conceptions from community mental health.
3. Ideology of community psychology.
4. Problems of concern to community psychologists.
5. Conceptions from individual psychology (behaviour modification theory and personality theory, role Theory)
6. Conceptions and strategies of social intervention.
7. Interventions in educational system, culture relativism and problem of criterion.
8. Interventions in mental health system.
9. Training models in community psychology.
10. Current trends in practice of community psychology.
11. Community Psychology in transition.

#### *Books for reference :*

1. Julian Rappaport. Community Psychology. Holt, Rinehart and Winston, N.Y., 1977.
2. Ira Iscoe, Bernard L. Bloom and Charles D. Spielberger. Community Psychology in Transition, John Wiley, N.Y., 1977.

#### Paper—III :

Practicals and Survey on the topics prescribed in the optional papers II (A), II (B), and II (C).

The prescribed number of practicals/survey should range between 6 and 8, and reports of the same should be maintained and submitted.

#### Papers IV and V :

Dissertation equal to two papers should be offered in the area of optional papers II (A), II (B) and II (C).

राजस्थान विश्वविद्यालय कार्यालय, जयपुर में दिनांक 7, 8 एवं 9 सितम्बर, 1979 को मध्याह्न 12 बजे सम्पन्न हुई, संस्कृत पाठ्यक्रम मंडल की बैठक की कार्यवाही का विवरण :

दिनांक 7 सितम्बर, 1979 को मध्याह्न 12 बजे संस्कृत पाठ्यक्रम मंडल की बैठक प्रारम्भ हुई, जिसमें निम्नलिखित सभी सातों सदस्य उपस्थित थे:

- |                              |   |                |
|------------------------------|---|----------------|
| 1. डा. हरिगम आचार्य (संयोजक) | } | आभ्यन्तर सदस्य |
| 2. डा. नरेशचन्द्र पाठक       |   |                |
| 3. डा. पुष्करदत्त शर्मा      |   |                |
| 4. श्री प्रेमरतन व्यास       |   |                |
| 5. डा. श्रीमती श्यामा भटनागर | } | बाह्य सदस्य    |
| 6. श्री बालचन्द्र शास्त्री   |   |                |
| 7. डा. न. अ. डांगे           |   |                |

1. विश्वविद्यालय एक्ट की धारा 4ई(8) के अनुसार पाठ्यक्रम मंडल के संयोजक पद के लिए आभ्यन्तर सदस्यों में से निर्धारित वरीयता क्रम के आधार पर श्री प्रेमरतन व्यास ने डा. हरिराम आचार्य, रीडर तथा अध्यक्ष संस्कृत विभाग, राजस्थान विश्वविद्यालय, जयपुर का नाम प्रस्तावित किया, जिसका सर्वसम्मति से समर्थन किया गया। डा. आचार्य ने सदस्यों का आभार व्यक्त करते हुए संयोजक का पद ग्रहण किया।

2. विश्वविद्यालय एक्ट की धारा 34(4)(i) के अनुसार परीक्षक-चयन-समिति में इस वर्ष के लिए संयोजक के अतिरिक्त सदस्य के रूप में कार्य करने के लिए डा. नरेशचन्द्र पाठक ने श्री प्रेमरतन व्यास का नाम प्रस्तावित किया किन्तु श्री व्यास ने इसे सवन्धवाद अस्वीकार करते हुए डा. पुष्करदत्त शर्मा के नाम का प्रस्ताव किया। डा. श्रीमती श्यामा भटनागर ने इसका अनुमोदन किया। सर्वसम्मति से डा. पुष्करदत्त शर्मा, अध्यक्ष, संस्कृत-विभाग, इंगर कॉलेज, बीकानेर को परीक्षक-चयन-समिति का सदस्य निर्वाचित घोषित किया गया।

3. मंडल ने परीक्षकों की सूची पर विचार करके उसमें यथानियम परिवर्तन एवं परिवर्धन किये तथा विश्वविद्यालय एक्ट की धारा 5(25)(2)(ए) के अनुरूप संशोधित पैनल तैयार किया।

4. 1979 की परीक्षाओं के सम्बन्ध में परीक्षकों के प्रतिवेदन प्रस्तुत न किये जाने के कारण उन पर विचार सम्भव नहीं हुआ। प्रश्नपत्रों के सम्बन्ध में कोई टिप्पणी नहीं की गई।

5. 1982 की निम्नलिखित विभिन्न परीक्षाओं के लिए पाठ्यक्रम एवं पाठ्यपुस्तकों के सम्बन्ध में परिवर्तन-परिवर्धन की संस्तुतियां की गई, जो कि संलग्न परिशिष्ट 1 में द्रष्टव्य है।

(अ) प्री-यूनिवर्सिटी परीक्षा 1982।

#### स्नातक परीक्षाएं

(अ) प्रथम वर्ष (पास) कोर्स, परीक्षा 1982।

(ब) द्वितीय वर्ष (पास) कोर्स, परीक्षा 1982।

(स) तृतीय वर्ष (पास) कोर्स, परीक्षा 1982।

#### ग्रान्स परीक्षाएं

(अ) पार्ट I परीक्षा 1982

(ब) पार्ट II परीक्षा 1982

(स) पार्ट III परीक्षा 1982

#### स्नातकोत्तर परीक्षाएं

(अ) पूर्वाह्न परीक्षा 1982

(ब) उत्तराह्न परीक्षा 1983

(स) एम. फिल्. परीक्षा 1982

6. शैक्षिक-परिपद् के निर्णय संख्या 4ए(11) दिनांक 15/16 मई, 1979 के संदर्भ में मंडल ने निर्णय किया कि संस्कृत का पाठ्यक्रम पहले से ही हिन्दी में मुद्रित होता आया है, अतः उसके अनुवाद की आवश्यकता नहीं है। केवल एम फिल्. पाठ्यक्रम के जो अंश अंग्रेजी में मुद्रित हैं, उनका हिन्दी में अनुवाद कराया जाना चाहिए।

7. शैक्षिक परिपद् के निर्णय संख्या 10, दिनांक 1 जून, 1979 और सिडीकेट के निर्णय संख्या 3, दिनांक 16 जून, 1979 द्वारा यूनिट प्रणाली के समापन के संदर्भ में पाठ्यक्रमों के पुनः समायोजन तथा 1981 की स्नातक परीक्षा में लागू होने वाले पाठ्यक्रम के 1979 संस्करण पर विचार किया गया। यथास्थान सामान्य, किंतु आवश्यक परिवर्तन करके 1981 के स्नातक-स्तरीय पाठ्यक्रमों की पांडुलिपियों को मुद्रणार्थ स्वीकृति प्रदान की गई।

8. शैक्षिक परिषद् के निर्णय संख्या 11, दिनांक 1 जून 1979 तथा सिडीकेट निर्णय सं. 2 दिनांक 16 जून 1979 द्वारा सेमेस्टर परीक्षा प्रणाली के समायोजन तथा 1981 में होने वाली परीक्षा में वार्षिक प्रणाली लागू होने के संदर्भ में सेमेस्टर परीक्षाओं के लिए निर्धारित पाठ्यक्रमों के आधार पर पुनः समायोजन पर विचार किया गया। इसी क्रम में 1981 तथा 1982 की क्रमशः स्नातकोत्तर पूर्वार्द्ध एवं उत्तरार्ध परीक्षाओं के लिए लागू होने वाले पाठ्यक्रम के 1979 संस्करण में यथास्थान आवश्यक मामूली परिवर्तन किये गये तथा स्नातकोत्तर पाठ्यक्रम 1981 की पांडुलिपि को मूद्रणार्थ स्वीकृति प्रदान की गई।

9. शैक्षिक परिषद् के निर्णय संख्या 14, दिनांक 11 मार्च 1979 द्वारा (1) पत्राचार अध्ययन एवं सतत शिक्षा संस्थान के स्नातकोत्तर परीक्षार्थियों को उत्तरार्द्ध के नवम प्रश्नपत्र की परीक्षा 1979 एवं 1980 में मौखिक परीक्षा की सुविधा प्रदान करने, (2) नियमित, स्वयंपाठी तथा पत्राचार संस्थान के परीक्षार्थियों को समान रूप से मौखिक परीक्षा अथवा उसके स्थान पर लिखित प्रश्नपत्र देने की सुविधा प्रदान करने तथा, (3) मौखिक परीक्षा के विकल्प में लिखित प्रश्नपत्र की संस्तुति के लिए संबद्ध संकाय के पाठ्यक्रम-मंडलों को लिखने के विषय में मंडल के सदस्यों को सूचना दी गई।

मंडल द्वारा वैकल्पिक प्रश्नपत्र के पाठ्यक्रम की संस्तुति पहले ही की जा चुकी है।

10. शैक्षिक परिषद् के निर्णय संख्या 10 (1), दिनांक 11 मार्च 1979 के संदर्भ में विचार करने के बाद मंडल का मत था कि स्नातकोत्तर स्तर पर लघु-शोध-प्रबन्ध के प्रावधान को हटाया जाना वांछनीय नहीं है।

11. स्नातक स्तर पर लागू किये जाने वाले जनसंख्या-अध्ययन के पाठ्यक्रम से मंडल के सदस्यों को अवगत कराया गया।

12. संस्कृत पाठ्यक्रम-मंडल के सदस्य सर्वसम्मति से प्रस्तावित करते हैं — कलासंकाय के विद्यार्थियों के लिए वैकल्पिक विषयों के रूप में तीन साहित्य एक साथ लेने का प्रतिबन्ध है, जो संभवतः सामाजिक परिवर्तनों से छात्र को अवगत रखने की दृष्टि से रखा गया है। किन्तु एक साथ तीन सामाजिक विषय लेने वाले के लिए ऐसा कोई प्रतिबन्ध नहीं लगाया गया है। अतः संस्कृत बोर्ड आफ स्टडीज यह प्रस्ताव करता है कि कलासंकाय तथा सामाजिक विज्ञान-संकाय का कोई भी विद्यार्थी एक साथ दो से अधिक सामाजिक विज्ञान के वैकल्पिक विषय

न ले और उसके लिए साहित्य दर्शन अथवा ललित कला का कम से कम एक वैकल्पिक विषय लेना अनिवार्य हो ।

13. मंडल ने भूतपूर्व संयोजक श्री राधागोविन्द शर्मा तथा राजकीय महा-विद्यालय कोटा की संस्कृत विभागाध्यक्ष-डा० श्रीमती ज्ञान साहनी के असामयिक निधन पर दो मिनट मौन रहकर दिवंगत आत्माओं के प्रति श्रद्धांजलि अर्पित की एवं निम्न-लिखित शोक-प्रस्ताव पारित किया—

“संस्कृत पाठ्यक्रम-मंडल, राजस्थान विश्वविद्यालय, जयपुर, मंडल के भूतपूर्व संयोजक श्री राधागोविन्द शर्मा तथा डा श्रीमती ज्ञान साहनी, अध्यक्ष, संस्कृत विभाग, राजकीय महाविद्यालय कोटा के असामयिक एवं दुःखद निधन पर गहरा एवं हार्दिक शोक व्यक्त करता है तथा परमेश्वर से दिवंगत आत्माओं की चिर-शांति एवं उनके शोक-सन्तप्त परिवारों को यह आघात सहन करने की शक्ति प्रदान करने के लिए प्रार्थना करता है। ”

डा० हरिराम आचार्य  
संयोजक



**प्री यूनिवर्सिटी संस्कृत परीक्षा, 1982**

एक प्रश्नपत्र 100 अंकों का होगा तथा समय 3 घण्टे का होगा ।

प्रश्न पत्र में अंक-विभाजन निम्नप्रकार रहेगा —

खण्ड (अ) पद्य कविता	20 अंक }	न्यूनतम उत्तीर्णांक 33
(ब) गद्य एवं नाटक	40 अंक }	
(स) व्याकरण	अंक 20 }	
रचना (लेखन)	„ 10 }	
अनुवाद	„ 10 }	

**( i ) निर्धारित पुस्तकें :—**

संस्कृत-माधुरी : द्विजेन्द्रनाथ शुक्ला तथा मनोहरलाल चौधरी  
(मेहरचन्द लक्ष्मणदास दिल्ली-6)

मूल्य रु. 2 50 मात्र ।

**( ii ) व्याकरण :—**

(अ) निम्नलिखित शब्दों के समस्त विभक्ति में शब्द रूप :—

राम, हरि, गुरु, वर्तु, पितृ, गिर, भूमृत्, भगवत्, गच्छत्,  
करिन्, पथिन्, आत्मन्, राजन्, विद्वम्, रमा, मति, नदी, स्त्री,  
धेनु, वयू, मातृ, वाच्, दिश्, गृह, वारि, नामन्, पंचन्, पप्,  
सप्तन्, अष्टन्, नवन्, दशन्, द्युष्मद्, अस्मद् और समस्त तीनों  
लिंगों में सर्व, किम्, द्वि, त्रि चतुर, इदम्, यत् एवं तत् ।

(ब) धातु-रूप :—

निम्नलिखित लकार मात्र—

लट्, लोट्, लङ्, लिङ् (विधि) एवं लृट् धातुएं—भू, हस्, पठ्,  
वद्, पच्, दृश्, स्था, स्मृ, पा, जि, सेव्, लभ्, दुष्, सह्, दुह्,  
स्वप्, हन्, आस्, हु, दा, धा, नृत्, भ्रम्, नश्, युष्, जन्, अप्,  
शक्, प्रच्छ्, मुच्, मृ, रुप्, सृज्, कृ, ग्रह्, ज्ञा, चुर्, कय्, भक्ष्,  
चिन्त् ।

(स) कारक और समास—

दो या तीन शब्दों से अधिक के नहीं ।

(द) साधारण सन्धियां, अनुवाद :—

अंग्रेजी एवं हिन्दी में छोटे-छोटे वाक्यों की रचना करना,  
प्रत्येक के दस-दस वाक्यों में निर्धारित लकारादि एवं स्थिति  
का प्रयोग ।

रचना :—जीवन लेखन सम्बन्धी एवं वर्णनात्मक निबन्ध लेखन ।

व्याकरण, अनुवाद एवं रचना, लेखन सम्बन्धी सहायक पुस्तकें :—

1. रचनानुवादकौमुदी खण्ड I : डॉ० कपिल देव द्विवेदी  
(विश्वविद्यालय प्रकाशन, गोरखपुर)
2. अनुवाद तरङ्गिणी : ले० पं० देव शर्मा, प्रकाशक : मेहरचन्द लक्ष्मण  
दास, कूचा चेलान, दरियागंज, देहली 6  
मूल्य रु. 1.50
3. आदर्श संस्कृत-प्रवेशिका : डॉ. नारायण शास्त्री कांकर  
प्रकाशक— अजमेरा बुक कम्पनी, जयपुर
4. माध्यमिक संस्कृत निबन्धादर्श : चन्द्रभानु त्रिपाठी  
रामनारायण लाल, इलाहबाद ।
5. संस्कृत रचनानुवाद शिक्षक : विश्वेश्वर  
चौखम्बा संस्कृत सीरीज (कार्यालय), वाराणसी ।
6. संस्कृत रचना-वल्ली : डॉ. स्वर्णलता अग्रवाल  
(मेहरचन्द लक्ष्मणदास, दिल्ली-6)

B.A. Pass-Ist Year (Arts) 1982

### 8. SANSKRIT

Scheme :

Min. Pass marks 36 : Max. Marks 100.  
One Paper, 3 hrs. duration—100 Marks

पाठ्यक्रम :

भाग अ

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|----|--|--------|
| 1. | (a) कविचरितामृतम् से हिन्दी में अनुवाद             | 12 अंक |
|    | (b) कविचरितामृतम् में से सामान्य प्रश्न            | 3 अंक  |
| 2. | (a) रघुवंश (प्रथम सर्ग) हिन्दी में अनुवाद          | 20 अंक |
|    | (b) रघुवंश (प्रथम सर्ग) पर सामान्य प्रश्न          | 5 अंक  |
| 3. | (a) स्वप्नवासवदत्तम् से हिन्दी में अनुवाद          | 22 अंक |
|    | (b) स्वप्नवासवदत्तम् पर सामान्य प्रश्न             | 5 अंक  |
|    | (c) स्वप्नवासवदत्तम् से संस्कृत में श्लोक का अन्वय | 3 अंक  |

भाग ब

- |    |                             |       |
|----|-----------------------------|-------|
| 4. | (a) सन्धि एवं समास          | 4 अंक |
|    | (b) कारक, कृदन्त एवं तद्धित | 6 अंक |

(c) निर्धारित शब्दों के रूप	4 अंक
(d) निर्धारित धातुओं के रूप	4 अंक
(e) लघुकौमुदी (संज्ञाप्रकरण)	4 अंक
5. हिन्दी से संस्कृत में अनुवाद	8 अंक
	— — —
योग	100 अंक
	— — —

*Notes 1.* The medium of Instruction shall be English/Hindi. The question paper will be set in Hindi only, but the candidates will have the option of answering the question in Hindi, Sanskrit or English, unless otherwise specified by the examiner.

2. Sanskrit must be written in Devnagri Script.

निर्धारित पुस्तकें—

खण्ड — 'अ'

- (1) गद्य—कविचरितामृतम्-ले० श्री परमेश्वरानन्द शास्त्री  
प्राप्ति स्थान भारती सदन A/24 सराय रोहिल्ला  
दिल्ली - 6 (संशोधित संस्करण 1970) 15 अंक
- (2) पद्य—रघुवंश महाकाव्यम् (प्रथम सर्ग) ले० कालिदास 25 अंक
- (3) नाटक—प्रतिज्ञायौगन्धरायण—ले० श्री भास 20 अंक

खण्ड — 'ब'

- (1) व्याकरण (Grammar)
  - (a) सन्धियां (Sandhis) 2 अंक
  - (b) समास (Samasas) दो या तीन शब्दों से बड़ा नहीं ।  
2 अंक
  - (c) कारक (Karakas) 2 अंक
  - (d) कृदन्त (Kridanta) केवल निम्नांकित प्रत्ययः—क्त,  
जन्, शानच्, वृच्, तुमुच्, क्त्वा, लप्, तव्य, यत्,  
अनीयर्, ल्युट्, व क्तिच् । 2 अंक
  - (e) तद्धित (Taddhita) —निम्नलिखित प्रत्ययों का प्रयोग :—  
तरप्, तमप्, त्व, तल्, मनुप् और वत् । 2 अंक
  - (f) शब्दरूप (Declension)—निम्नांकित शब्दों के सभी  
विभक्तियों में शब्द रूप— 4 अंक

राम, हरि, गुरु, कर्तृ, पितृ, गो, भूमृत्, भगवत्, गच्छत्, करिन्, पथिन्, आत्मन्, राजन्, विद्वस्, रमा, मति, नदी, स्त्री, धेनु, वधू, मातृ, वाच्, दिश, गृह, वारि, नामन्, पंचन्, पप्, सप्तन्, अष्टन्, नवन्, दशन्, युष्मद्, अस्मद् तथा तीनों लिङ्गों में—सर्व, किम्, द्वि, त्रि, चतुर्, यावत्, तद् और तादृश्। इनके अतिरिक्त सखि, पति, वणिज्, महत्, युवन्, चन्द्रमस्, स्वसृ, सरित्, दधि, जगत्, मनस् तथा कति शब्द के भी रूप।

(g) धातुरूप (Conjugation) – निम्नलिखित लकार मात्र—4 अंक

लट्, लिट्, लङ्, लृट्, लोट्, लिङ् (विध्) तथा लुङ्। इनमें से लिट् लकार (पगोक्षे लिट्) का परिचय मात्र अपेक्षित है। उस पर प्रश्न नहीं पूछे जायेंगे।

निम्नलिखित धातुएँ :—

भू, हस्, पठ्, वद, पच्, नम्, गम्, दृश्, स्वा, स्मृ, पा, जि, सेव्, लभ्, वृष्, सह्, अस्, दुह्, स्वप्, हव् आस्, हु, दा, घा, नृत्, भ्रम्, नम्, युव्, जव्, आप्, शक्, प्रच्छ्, मृच्, कृ, ख्व्, भुज्, ग्रह्, ज्ञा, चुर्, कथ्, भक्ष् तथा चिन्त्।

(b) लघु सिद्धान्त-कौमुदी—संज्ञा-प्रकरण मात्र। 4 अंक

(i) अनुवाद—उपयुक्त व्याकरण-पाठ्यक्रम को ध्यान में रखकर समान स्तर के वैकल्पिक वाक्य अनुवाद के लिए पूछे जाएंगे।

8 अंक

सहायक पुस्तकें :

1. रचनानुवाद कौमुदी—डॉ० कपिलदेव द्विवेदी,  
विश्वविद्यालय प्रकाशन, गोरखपुर. मूल्य 6.00 रु०
  2. संस्कृत रचनानुवाद-प्रभा—डॉ० श्रीनिवास शास्त्री,
  3. लघु सिद्धान्त कौमुदी—डॉ० पुष्कर दत्त शर्मा,  
प्रकाशक, अजमेरा बुक कम्पनी; त्रिपोलिया बाजार, जयपुर-3
  4. संक्षिप्त लघुकौमुदी—डॉ. नारायण शास्त्री काँकर।  
प्राप्ति स्थान : रमेश बुक डिपो, त्रिपोलिया बाजार, जयपुर-3
- संदर्भ-ग्रन्थ—अष्टाध्यायी-भाष्य—श्री ब्रह्मदत्त जिज्ञासु।  
लघु सिद्धांत कौमुदी—व्याख्याकार—भीमसेन  
लघु सिद्धांत कौमुदी—व्याख्याकार—महेशसिंह कुशवाहा  
लघु सिद्धांत कौमुदी—व्याख्याकार—श्रीधरानंद।

## B.A. Pass-II Year Arts Exam., 1982

## 6 संस्कृत

## Scheme:

Min Pass marks 72 : Max Marks 200

प्रथम प्रश्नपत्र, समय 3 घण्टे	100 अंक
द्वितीय प्रश्नपत्र, समय 3 घण्टे	100 अंक

Notes :—1. The medium of instruction shall be English/Hindi. The question paper will be set in Hindi only, but the candidates will have the option of answering the questions in Hindi, Sanskrit or English, unless otherwise specified by the examiner.

2. Sanskrit must be written in Devnagri Script.
3. A candidate has the option to offer Paper II of वर्ग 'अ' या वर्ग 'ब'. A candidate who offers paper II of वर्ग 'ब' in lieu of Paper II of वर्ग 'अ' of IYr. T.D.C. Arts will have to offer Paper I of वर्ग 'ब' in lieu of Paper I of वर्ग 'अ' in Final Year T.D.C. (Sanskrit) also.

## अंक-विभाजन

प्रथम प्रश्नपत्र : नाटक, छन्द व अलंकार

इस प्रश्नपत्र में अंक-विभाजन इस प्रकार होगा :—

( i ) नाटक :

(अ) अनुवाद एवं व्याख्या 50 अंक

(ब) सामान्य प्रश्न 10 अंक

( ii ) छन्द (Chhanda) 15 अंक

( iii ) अलंकार (Alankara) 15 अंक

( iv ) सम्बद्ध व्याकरण (Applied Grammar) 10 अंक

योग 100 अंक

## पाठ्यक्रम :

1. नाटक—अभिज्ञानशाकुन्तलम्—महाकवि कालिदास ( निर्णय सागर, बम्बई के पाठानुसार)

2. छन्द—अभिज्ञान शाकुन्तलम् में प्रयुक्त सभी छन्द ।

सहायक पुस्तकें : वृत्तरत्नाकर । छन्दशाकुन्तलम्—शिवसागर त्रिपाठी ।

3. अलंकार—अलंकार की परिभाषा तथा निम्नलिखित अलंकार—  
अनुप्रास, यमक, श्लेष, स्वभावोक्ति, उपमा, मालोपमा, रूपक,  
उत्प्रेक्षा, अतिशयोक्ति व्यतिरेक, प्रतिवस्तूपमा, निदर्शना दृष्टान्त,  
अर्थान्तरन्यास, तुल्ययोगिता, दीपक, सन्देह, भ्रान्तिमान्, अपह्नुति  
एवं समासोक्ति ।

टिप्पणी—उपयुक्त निर्दिष्ट अलंकार अभिज्ञान शाकुन्तलम् के पद्यों में से भी पूछे  
जा सकते हैं ।

सहायक पुस्तकें :—

1. काव्यदीपिका—अष्टमशिक्षा । सं.-डॉ. भोलाशंकर व्यास
2. काव्यदीपिका—अष्टमशिक्षा । सं.-डॉ. रामकृष्ण आचार्य, विनोद  
पुस्तक-मन्दिर, आगरा ।
4. सम्बद्ध व्याकरण (Applied Grammar) :  
शब्दों की व्युत्पत्ति (Derivation of words) व  
समास (Compounds) ।

सहायक पुस्तकें :

- ( i ) संस्कृत व्याकरण-प्रवेशिका—श्री वावूराम सक्सेना  
(रामनारायण लाल बेनीमाधव, इलाहाबाद । मूल्य 5.00) ।
- ( ii ) स्नातक संस्कृत-व्याकरण—नेमिचन्द्र शास्त्री
- ( iii ) हायर संस्कृत ग्रामर—प्रो. एम. आर. काले (हिन्दी संस्करण)

B.A. Pass-II Year Arts.

6. संस्कृत

Scheme :

Min. Pass marks 72 : Max. Marks 200

प्रथम प्रश्न पत्र-समय 3 घण्टे

100 अंक

द्वितीय प्रश्न पत्र-समय 3 घण्टे

100 अंक

Notes : 1. The medium of instruction shall be English/Hindi. The  
question paper will be set in Hindi only, but the candi-

dates will have the option of answering the questions in Hindi, Sanskrit or English, unless otherwise specified by the examiner.

2. Sanskrit must be written in Devnagri Script.
3. A candidate has the option to offer Paper II of वर्ग 'अ' or वर्ग 'ब'. A candidate who offers Paper II of वर्ग ब in lieu of Paper II of वर्ग 'अ' of IYr T.D.C. Arts will have to offer Paper I of वर्ग 'ब' in lieu of Paper I of वर्ग 'अ' in Final Year T.D.C. (Sanskrit) also

वर्ग 'अ' के लिए

द्वितीय प्रश्न पत्र : भारतीय संस्कृति के तत्त्व, पद्य-साहित्य, अनुवाद, रचना एवं व्याकरण ।

इस प्रश्न पत्र में अंक-विभाजन इस प्रकार होगा :—

1. भारतीय संस्कृति के तत्त्व	30 अंक
2. पद्य साहित्य :	30 अंक
(क) संस्कृत से हिन्दी में अनुवाद	14 अंक
(ख) हिन्दी में व्याख्या	7 अंक
(ग) संस्कृत में व्याख्या	5 अंक
(घ) साधारण प्रश्न	4 अंक
3. अनुवाद (हिन्दी से संस्कृत में)	15 अंक
4. रचना (वाक्यों का शुद्धीकरण व रिक्त स्थान-पूर्ति)	15 अंक
5. व्याकरण	10 अंक
योग	100 अंक

पाठ्यक्रम :—

1. भारतीय संस्कृति के तत्त्व (Elements of Hindu Culture) : निम्न लिखित विषयों का सामान्य अध्ययन अपेक्षित है—  
 (क) भारतीय संस्कृति-विषय, पृष्ठभूमि तथा मूलभूत विशेषताएं ।

- (ख) भारतीय संस्कृति के विकास की संक्षिप्त रूपरेखा—  
पूर्व वैदिक काल, वैदिक काल, वैदिकोत्तर काल, मध्य  
काल तथा आधुनिक काल ।
- (ग) वर्ण, आश्रम और संस्कार ।
- (घ) लेखन-कला की उत्पत्ति (Origin of Writing)
- (ङ) शिक्षा (वैदिक काल से लेकर 7वीं शताब्दी ई. तक)
- (च) राजनैतिक संगठन तथा लोकशासन—  
(वैदिक काल से 7वीं शताब्दी ई. तक)
- (छ) भारतीय संस्कृति का मानव-कल्याण में योगदान  
(साहित्य, दर्शनशास्त्र व विज्ञान के क्षेत्र में)

सहायक पुस्तकें :—

- (i) हमारी संस्कृति—डा. रामेश्वर गुप्त (मेहरचन्द लक्ष्मणदास,  
दिल्ली)
- (ii) भारतीय सभ्यता एवं संस्कृति—श्री पी. के. आचार्य
- (iii) भारत की सांस्कृतिक साधना—डा. रामजी उपाध्याय
- (iv) भारतस्य सांस्कृतिकनिधिः—डा. रामजी उपाध्याय, सागर
- (v) भारतीय संस्कृति—डा. शिवदत्त ज्ञानी  
(संशोधित तथा परिवर्धित संस्करण)
- (vi) याज्ञवल्क्यस्मृतिः (आचाराध्यायः)
2. पद्य साहित्य (Poetry)  
महाकवि भारवि-किरातार्जुनीयम्—प्रथम सर्ग
3. अनुवाद (Translation)
4. रचना (Composition)
5. व्याकरण  
लघु सिद्धान्त-कौमुदी (सन्धि प्रकरण)

अर्च सन्धि :

निम्नलिखित सूत्रों पर ही प्रश्न पूछे जायेंगे :—

- (1) इको यणचि 6/1/77 (2) तस्मिन्निति निदिष्टे पूर्वस्य 1/1/66  
(3) स्थानेऽन्तरतमः 1/1/50 (4) क्त्वां जश् क्त्वां 8/4/53 (5)  
एचोऽयवायावः 6/1/78 (6) अदेङ् गुणः 1/1/2 (7) आद्गुणः 6/1/87



(8) ङरुण् स्वरः 1 1 51 (9) लोपः शाकल्यस्य 8 3/19 (10) वृद्धिरादैच् 1 1 1 (11) वृद्धिरेचि 6 1 88 (12) एत्येयत्युत्सु 6 1 89 (13) एङि परस्वम् 6 1 94 (14) अचोऽन्त्यादि टि 1 1 64 (15) अकः सवर्णे दीर्घः 6 1 101 (16) एङः पदान्तादति 6 1 109 (17) दूराद्धूते च 8 2 84 (18) प्लुत-प्रगृह्या अचि नित्यम् 6 1 125 (19) ईद्वेद् द्विवचनं प्रगृह्यम् 1 1 11

हल् सन्धि :

(20) स्तोः द्युना द्युः 8 4 40 (21) प्लुता प्लुः 8 4 41 (22) ऋलां जशोऽन्ते 8 2 39 (23) यरोऽनुनासिकेऽनुनासिको वा 8 4 45 (22) तोलि 8 4 60 (25) ऋरो ऋरि सवर्णे 8 4 65 (26) खरि च 8 4/55 (27) ऋयो होऽन्यतरस्याम् 8 4/62 (28) षश्चोऽटि 8 4 63 (29) मोऽनुस्वारः 8 3 23 (30) नदचाऽपदान्तस्य ऋलि 8/3/24 (31) अनुस्वारस्य ययि परसवर्णः 8/4/58 (32) ङमो ह्रस्वादचि ङमुण् नित्यम् 8/3/32 (33) खखसानयोदिसर्जनीयः 8/3/15 (34) द्वे च 6/1/73

विसर्ग सन्धि :

(35) विसर्जनीयस्य सः 8/3/34 (36) वा शरि 8/3/36 (37) सप्तजुषो हः 8/2/66 (38) अतोरोरप्लुतादप्लुते 6/1/113 (39) हशि च 6/1/114 (40) भो भगो अघो अपूर्वस्य योऽशि 8/3/17 (41) हलि सवर्णाम् 8/3/22 (42) रो रि 8/3/14 (43) ढ्रलोपे पूर्वस्य दीर्घोऽणः 6/3/111

सहायक पुस्तकैः :

- (i) संस्कृत निबन्ध पथ प्रदर्शक-आप्टे। अनुवादक—(श्री रामकृष्ण शुक्ल) प्रकाशक—(रामनारायण लाल, इलाहाबाद)
- (ii) रचनानुवाद-कौमुदी-डॉ० कपिलदेव द्विवेदी, प्रकाशक—(विश्वविद्यालय प्रकाशन, गोरखपुर)
- (iii) संस्कृत रचनानुवाद-प्रभा-डॉ० श्रीनिवास शास्त्री
- (iv) संक्षिप्त लघुकौमुदी-श्री नारायण शास्त्री कांकर, प्राप्तिस्वान—रमेश बुक डिपो, त्रिपोलिया बाजार, जयपुर
- (v) किरातार्जुनीयम्—टीका. डॉ. वीरेन्द्रकुमार वर्मा

## 6. संस्कृत

Scheme :

Min. Pass marks 72 : Max. Marks 200

Notes : 1. The medium of instruction shall be English/Hindi, The question paper will be set in Hindi only, but

the candidates will have the option of answering the questions in Hindi, Sanskrit or English, unless otherwise specified by the examiner.

2. Sanskrit must be written in Devnagri Script.
3. A candidate has the option to Offer Paper II of वर्ग 'अ' या वर्ग 'ब', A candidate who offers Paper II of वर्ग ब in lieu of Paper II of वर्ग अ' of II Yr. T.D.C. Arts. will have to offer Paper I of वर्ग ब in lieu of Paper I of वर्ग 'अ' in Final Year T.D.C. (Sanskrit) also.

### वर्ग 'ब' के लिए

द्वितीय प्रश्नपत्र—प्राकृत—काव्य, प्राकृत भाषा एवं साहित्य का इतिहास, व्याकरण, रचना तथा अनुवाद ।

(क) गद्या-सप्तशती - 1 से 200 गद्या तक 25 अंक

(ख) प्राकृत भाषा का इतिहास 15 अंक

भाषाओं का वर्गीकरण, भारतीय भाषाएँ, मध्यकालीन भारतीय भाषाएँ, संस्कृत तथा प्राकृत, पालि तथा प्राकृत, अपभ्रंश तथा प्राकृत, शिलालेखों की प्राकृत, प्राकृत भाषाओं का वर्गीकरण तथा विशेषताएँ, महाराष्ट्री, शौरसेनी, मागधी, अर्धमागधी, पेशाची तथा भारतेतर प्राकृत ।

### संस्तुत पुस्तकें :

1. Prakrit Languages and their constitution of Indian Culture by S.M. Katre.
2. Introduction to Prakrit—A.C. Woolner.
3. प्राकृत भाषा और साहित्य का आलोचनात्मक इतिहास by डा० नेमिचन्द्र शास्त्री

(ग) प्राकृत साहित्य का इतिहास 20 अंक  
काव्य, नाटक, गद्य तथा कथा साहित्य

टिप्पणी :- परीक्षार्थियों से संस्कृत तथा प्राकृत में इन विधाओं की उत्पत्ति तथा विकास एवं संस्कृत से तुलनात्मक अध्ययन की अपेक्षा की जाती है ।

## संस्तुत पुस्तकें :

1. प्राकृत साहित्य का इतिहास by जगदीशचन्द्र जैन
2. History of Sanskrit Literature by A.B. Keith.
3. संस्कृत साहित्य की रूपरेखा—पाण्डे एवं व्यास ।
4. संस्कृत साहित्य का इतिहास—बी० वरदाचारी ।

(घ) व्याकरण : सन्धि सभास, कारक, कृदन्त तथा तद्धित का सामान्य ज्ञान ।  
15 अंक

## संस्तुत पुस्तकें :

1. वररुचि—प्राकृत प्रकाश ।
2. पिशेल—प्राकृत व्याकरण । अनुवादक—हेमचन्द्र जोशी ।

(ङ) रचना—  
रिक्त स्थानों की पूर्ति तथा वाक्यों का शुद्धीकरण । 10 अंक

(च) अनुवाद—  
(1) संस्कृत से प्राकृत (2) प्राकृत से संस्कृत । 15 अंक

## अंकों का विभाजन :

(क) काव्य-साहित्य  
(1) प्राकृत से हिन्दी में अनुवाद 12 अंक  
(2) प्राकृत से हिन्दी में व्याख्या 6 अंक  
(3) प्राकृत से संस्कृत में व्याख्या 4 अंक  
(4) गाथा-सप्तशती पर सामान्य प्रश्न 3 अंक

(ख) प्राकृत भाषाओं का इतिहास -

- (1) भाषाओं का वर्गीकरण, भारतीय भाषाएँ, मध्यकालीन भारतीय भाषाएँ, संस्कृत तथा प्राकृत, पालि तथा प्राकृत, अपभ्रंश तथा प्राकृत, शिलालेखों की प्राकृत । 7 अंक
- (2) प्राकृत भाषाओं का वर्गीकरण तथा विशेषताएँ—महाराष्ट्री शौरसेनी, मागधी, अर्धमागधी, पेशाची तथा भारतेतर प्राकृत । 8 अंक

(ग) प्राकृत साहित्य का इतिहास—

- (1) काव्य तथा गद्य 10 अंक
- (2) नाटक तथा कथा—साहित्य 10 अंक

## (घ) व्याकरण -

(1) सन्धि	3 अंक
(2) समास	3 अंक
(3) कारक	3 अंक
(4) कृदन्त	3 अंक
(5) तद्धित	3 अंक

## (ङ) रचना -

(1) रिक्त स्थानों की पूर्ति	5 अंक
(2) वाक्य-शुद्धि	5 अंक

## (च) अनुवाद—

(1) संस्कृत से प्राकृत	7 अंक
(2) प्राकृत से संस्कृत	8 अंक

योग 100 अंक

B.A. Pass—Final Year T.D.C. Arts Exam. of 1982

### 6. संस्कृत

*Scheme :*

Min. Pass Marks 72

Max. Marks 200

प्रथम प्रश्न पत्र : समय 3 घण्टे

100 अंक

द्वितीय प्रश्न पत्र : समय 3 घण्टे

100 अंक

*Notes :*

1. The medium of Instruction shall be English/Hindi. The question paper will be set in Hindi only, but the candidates will have the option of answering the questions in Hindi, Sanskrit or English, unless otherwise specified by the examiner.
2. Sanskrit must be written in Devnagri Script.
3. A candidate who offers वर्ग 'व' II paper in lieu of paper II of वर्ग 'अ' of second year T.D.C. Arts will have to offer Paper-I of वर्ग 'व' in lieu of paper-I of वर्ग 'अ' in Final year T.D.C. (Sanskrit) also. Papers for वर्ग 'अ' and 'व' will be set separately.

## Syllabus :

वर्ग—‘अ’

प्रथम पत्र वैदिक साहित्य, गद्य साहित्य एवं संस्कृत साहित्य का इतिहास ।

अंक-विभाजन :—

( i ) वैदिक साहित्य	30 अंक
(ii) गद्य-साहित्य	30 अंक
(iii) संस्कृत साहित्य का इतिहास	30 अंक
(iv) सम्बद्ध व्याकरण	10 अंक

## पाठ्यक्रम :

(i) (अ) वैदिक साहित्य 20 अंक

ऋग्वेद के निम्नलिखित सूक्त पाठ्यक्रम में निर्धारित किए गए हैं—

(क) वरुण 1/25 (ख) सूर्य 1/115 (ग) विष्णु 1/154

(घ) इन्द्र 2/12 (ङ) उपसृ 3/61 (च) आपसृ 7/49

(छ) प्रजापति 10/121

## सहायक पुस्तकें :

(1) ऋग्वेद-सौरभम्—सं. श्री मूलचन्द्र शास्त्री

प्रकाशक—इण्डिया बुक हाऊस, चौड़ा रास्ता, जयपुर ।

(नवीनतम संस्करण) मूल्य रु. 1.58

(2) वेदचयनम्—डॉ. विश्वम्भरनाथ त्रिपाठी, वाराणसी

## अवधेयम् :

परीक्षार्थियों से यह अपेक्षा की जाती है कि वे उपर्युक्त सूक्तों के मंत्रों का अनुवाद व व्याख्या तो प्रस्तुत करेंगे ही, साथ ही, उनसे सम्बद्ध देवताओं पर चरित्रचित्रणात्मक प्रश्न भी पूछे जाएंगे ।

(व) ईशावास्योपनिषद्

10 अंक

## सहायक पुस्तक :

ईशावास्योपनिषद्—डॉ. सुभाष वेदालंकार

प्राप्ति स्थान—अजमेरा बुक कम्पनी, जयपुर ।

(ii) गद्य साहित्य :

संस्कृत गद्य-प्रभा — डॉ. प्रभाकर शास्त्री एवं डॉ. पुष्करदत्त शर्मा  
(नवीन संस्करण—1971 ई. में स्वीकृत)

(iii) संस्कृत साहित्य का इतिहास :

निम्नलिखित विषयों का साधारण अध्ययन :

- (क) वीर-काव्य (Epics) — रामायण और महाभारत
- (ख) काव्य (ऐतिहासिक काव्यों सहित)
- (ग) गीति-काव्य (Lyrics)
- (घ) गद्य-काव्य (Prose)
- (ङ) नाटक-साहित्य (Drama)
- (च) कथा-साहित्य तथा उपदेशात्मक पद्य-कथाये (Fables)

सहायक पुस्तकें :

- ( i ) कीय—व्यासिकल संस्कृत लिटरेचर (Heritage of Indian Series)
- ( ii ) पाण्डेय व व्यास—संस्कृत साहित्य की रूपरेखा (साहित्य निवेदन, कानपुर)
- ( iii ) डॉ० रामजी उपाध्याय—संस्कृत साहित्य का आलोचनात्मक इतिहास ( रामनारायण लाल बेनी माधव, इलाहाबाद, मू० 8 00)
- ( iv ) सत्यनारायण शास्त्री—संस्कृत साहित्य का नवीन इतिहास, (प्रकाशक—आर्य बुक डिपो, करोल बाग, नई दिल्ली-5, मू०-4.50)
- ( v ) श्री हंसराज अग्रवाल —संस्कृत साहित्य का संक्षिप्त इतिहास (द्वितीय संस्करण) (प्रकाशक—मेहरचन्द लक्ष्मण दास दिल्ली-6)
- ( vi ) श्री बी. वरदाचारी—संस्कृत साहित्य का इतिहास । प्रकाशक—श्री रामनारायण लाल, इलाहाबाद ।
- ( vii ) बलदेव उपाध्याय—संस्कृत साहित्य का इतिहास

सम्बद्ध व्याकरण :

कारकों का प्रयोग ।

सहायक पुस्तकें :

- ( i ) संस्कृत व्याकरण-प्रवेशिका — श्री दादूराम सक्सेना (प्रकाशक—रामनारायण लाल बेनी माधव, इलाहाबाद)

- (ii) व्याकरण-प्रदीप - श्री एम. के. सरकार एवं श्री गोकुलचन्द्र शर्मा—प्रकाशक—ओरियेंटल बुक डिपो, दिल्ली।

### 6. संस्कृत

#### Scheme :

Min. Pass Marks 72 : Max. Marks 200

प्रथम प्रश्न पत्र, समय 3 घण्टे	100 अंक
द्वितीय प्रश्न पत्र, समय 3 घण्टे	100 अंक

- Notes :—1. The medium of Instruction shall be English/Hindi. The question paper will be set in Hindi only, but the candidates will have the option of answering the questions in Hindi, Sanskrit or English, unless otherwise specified by the examiner.
2. Sanskrit must be written in Devnagri Script.
3. A candidate who offers वर्ग व II paper in lieu of Paper II of वर्ग 'अ' of II Yr. T.D.C. Arts will have to offer Paper I of वर्ग 'ब' in lieu of Paper I of वर्ग 'अ' in Final Year T.D.C. (Sanskrit) also. Papers for वर्ग 'अ' and वर्ग 'ब' will be set separately.

### वर्ग 'ब'

#### प्रथम प्रश्न पत्र—प्राकृत :

नाटक, गद्य, भारतीय संस्कृति के तत्त्व और पालि व्याकरण

(क) नाटक 30 अंक

आनन्दसुन्दरी : घनश्याम

(ख) गद्य 30 अंक

पालि जातिकावली : सम्पादक—वटुकनाथ शर्मा

(ग) भारतीय संस्कृति के तत्त्व 30 अंक

(1) भारतीय संस्कृति : प्रवृत्तियाँ, आवार-भूमि और मूलभूत विशेषताएँ

(2) विभिन्न युगों में भारतीय संस्कृति के विकास की रूपरेखा—प्राग्वैदिक, वैदिक, उत्तर-वैदिक, मध्य एवं आधुनिक काल।

- (3) वरुण, आश्रम तथा संस्कार
- (4) लेखन कला की उत्पत्ति
- (5) सातवीं शताब्दी ईस्वी तक शिक्षा
- (6) सातवीं शताब्दी ईस्वी तक राजनैतिक संगठन एवं प्रशासन
- (7) भारतीय संस्कृति का मानव कल्याण के लिए साहित्य, दर्शन एवं विज्ञान के क्षेत्र में योगदान

#### संस्तुत पुस्तकें :

पी. के. आचार्य : भारतीय सभ्यता एवं संस्कृति  
शिवदत्त जानी : भारतीय संस्कृति

(घ) पालि व्याकरण	10 अंक
योग	100 अंक

#### संस्तुत पुस्तकें :

पालि-प्रबोध : आद्यादत्त ठाकुर । प्रकाशक—गंगा ग्रन्थ-माला, गौतम बुद्ध मार्ग, लखनऊ ।

#### अंक योजना—

##### (क) नाटक—

प्राकृत से हिन्दी अनुवाद	15 अंक
संस्कृत में व्याख्या	5 अंक
सामान्य-ज्ञान प्रश्न	10 अंक

##### (ख) गद्य

पालि से हिन्दी में अनुवाद	15 अंक
पालि से संस्कृत में व्याख्या	5 अंक
सामान्य प्रश्न	10 अंक

##### (ग) भारतीय संस्कृति के तत्त्व—

- (1) भारतीय संस्कृति-प्रवृत्तियाँ, आधार-भूमि, मूलभूत विशेषताएँ तथा विकास की रूपरेखा (पूर्व वैदिक से आधुनिक काल तक) 10 अंक
- (2) वरुण, आश्रम, संस्कार तथा शिक्षा (वैदिक काल से सातवीं शती तक) 10 अंक



- (3) लेखन कला की उत्पत्ति, राजनैतिक संगठन तथा लोक प्रशासन (वैदिक काल से लेकर सातवीं शताब्दी ई० तक) । भारतीय संस्कृति का मानव कल्याण के लिए योगदान (साहित्य, दर्शन एवं विज्ञान के सन्दर्भ में) 10 अंक

(घ) पालि व्याकरण—

सन्धि	2 अंक
समास	2 अंक
कारक	2 अंक
कृदन्त	2 अंक
तद्धित	2 अंक

योग : 100 अंक

## 6 संस्कृत

Scheme :

Min. Pass marks 72 :	Max. Marks 200
प्रथम प्रश्न पत्र, समय 3 घण्टे	100 अंक
द्वितीय प्रश्न पत्र, समय 3 घण्टे	100 अंक

अवधेयम् :

- ( i ) बी. ए. परीक्षा के तीनों वर्षों में संस्कृत विषय के लिए निर्देश का माध्यम अंग्रेजी या हिन्दी भाषा रहेगी । प्रश्नपत्र केवल हिन्दी में बनाया जायेगा, परन्तु परीक्षार्थी के लिए यह विकल्प है कि वह परीक्षक द्वारा विशेष रूप से निर्दिष्ट स्थलों को छोड़कर शेष प्रश्नों का उत्तर हिन्दी, संस्कृत या अंग्रेजी भाषा में से किसी में भी प्रस्तुत कर सकता है ।

- ( ii ) संस्कृत भाषा को देवनागरी लिपि में ही लिखना अनिवार्य है ।

द्वितीय पत्र : द्रुतपाठ, अनुवाद, रचना तथा व्याकरण

पाठ्यक्रम एवं अंक विभाजन :

1. द्रुतपाठ	10 अंक
2. अनुवाद	30 अंक
3. रचना	20 अंक
4. व्याकरण	20 अंक

( i ) द्रुतपाठ (Rapid Reading) :

भगवद्गीता (द्वितीय एवं तृतीय अध्याय)

द्वा सुपर्णा—डॉ० रामजी उपाध्याय ।

( ii ) अनुवाद व रचना

सहायक पुस्तकें :

( i ) संस्कृत निबन्ध पथ-प्रदर्शक—मूल ले. श्री बी. एस. ग्रान्टे,  
अनुवादक—श्री रामकृष्ण शुक्ल; प्रकाशक—रामनारायण बेनी  
माधव, इलाहाबाद ।

( ii ) डॉ० कृष्णदेव उपाध्याय—संस्कृत निबन्ध-चन्द्रिका, प्रकाशक—  
शारदा मन्दिर, काशी ।

( iii ) संस्कृत निबन्धावलि—डा० रामजी उपाध्याय, लोक भारती  
प्रकाशन, 15-ए महात्मा गांधी मार्ग, इलाहाबाद—1

( iv ) संस्कृत निबन्ध नवनीतम्—डा० पारसनाथ द्विवेदी एवं वंशीधर  
चतुर्वेदी । प्रकाशक—श्रीराम मेहरा एण्ड कम्पनी, आगरा ।

( v ) संस्कृत व्याकरण-मंजरी—ले० श्री राम स्वामी । प्रकाशक—  
आयुर्वेद हिन्दी संस्कृत पुस्तक भण्डार, झालानियों का रास्ता,  
जयपुर—1 ।

( vi ) संस्कृत निबन्ध-पारिजात—ले. डॉ० एन०के० गौतम तथा डा. सुभाष  
वेदालंकार ।

प्राप्ति स्थान—मलिक एण्ड कम्पनी, जयपुर ।

( iii ) व्याकरण (Grammar) :

लघु सिद्धान्त कौमुदी—कृत्य प्रक्रिया तथा पूर्व कृदन्त—प्रकरण ।

सहायक पुस्तकें :

( 1 ) लघु सिद्धान्त कौमुदी—डॉ० पुष्कर दत्त शर्मा,  
प्रकाशक—अजमेरा बुक कम्पनी, त्रिपोलिया बाजार, जयपुर ।

( 2 ) संस्कृत व्याकरणम्—श्री बाबूराम त्रिपाठी ।

( 3 ) स्नातक संस्कृत-व्याकरणम्—डॉ० नेमिचन्द्र शास्त्री, ज्ञानदा प्रकाशन,  
पटना—4 ।

अवधेयम् :

कम्पोजीशन—रचना का अर्थ 'निबन्ध' है ।

अंक-विभाजन

1. श्रीमद्भगवद्गीता से भावार्थ

10 अंक

2. द्वा सुपर्णा से अनुवाद

10 अंक

3. द्रुतपाठ की पुस्तकों से सामान्य प्रश्न	10 अंक
4. संस्कृत से हिन्दी में अनुवाद	15 अंक
5. हिन्दी से संस्कृत में अनुवाद	15 अंक
6. संस्कृत में निबन्ध	20 अंक
7. सूत्रों की व्याख्या	8 अंक
8. प्रयोग-सिद्धि	12 अंक

## B.A. Honours—Part I Exam., 1982.

## 4. SANSKRIT LITERATURE (Hons)

## Scheme :

Two Papers	Duration	Max. Marks	Min. Pass Marks
Paper I	3 hrs.	100	80
Paper II	3 hrs.	100	

पाठ्यक्रम—अंक-विभाजन एवं पाठ्य पुस्तकें ।

अनर्त प्रथम प्रश्न-पत्र—काव्य (Poetry) तथा काव्यशास्त्र (Rhetorics)

काव्य	( i ) रघुवंश—त्रयोदश सर्ग	15 अंक
	( ii ) किरातार्जुनीयम्—प्रथम सर्ग	15 अंक
	( iii ) भामिनी-विलास प्रथम विलास (प्रास्ताविक विलास)	15 अंक
	( iv ) नीतिशतक—मर्तृहरि (संपूर्ण)	15 अंक
काव्यशास्त्र	( v ) काव्यदीपिका—प्रथम चार शिखाएँ (काव्यलक्षण, भेद, शब्द शक्तियाँ आदि)	25 अंक
	( vi ) सामान्य प्रश्न (समालोचनात्मक)	15 अंक
		100 अंक

## 5. SANSKRIT LITERATURE (Hons.)

## Scheme :

Two Papers	Duration	Max. Marks	Min. Pass marks
Paper I	3 hrs.	100	80
Paper II	3 hrs.	100	

पाठ्यक्रम : अंक-विभाजन और पाठ्य पुस्तकें—

अनर्त द्वितीय प्रश्न-पत्र—संस्कृत साहित्य का इतिहास, व्याकरण, अनुवाद तथा निबन्ध :

1. संस्कृत साहित्य का इतिहास—महाकाव्य (ऐतिहासिक महाकाव्य सहित), रामायण तथा महाभारत, पौराणिक साहित्य, गद्य

काव्य, नाटक-साहित्य, पशु-कथाएँ, आख्यान-साहित्य, उपयोगी  
नीतिकथाएँ, गीतिकाव्य । 40 अंक

सहायक पुस्तकें :

- ( i ) कीथ क्लासिकल संस्कृत लिटरेचर (Heritage of India Series) ।
- ( ii ) पाण्डेय व व्यास—संस्कृत साहित्य की रूपरेखा (साहित्य निकेतन, कानपुर) ।
- ( iii ) डॉ. रामजी उपाध्याय—संस्कृत साहित्य का आलोचनात्मक इतिहास ।  
(रामनारायणलाल बेनी माधव, इलाहाबाद, मू. 8.00) ।
- ( iv ) सत्यनारायण शास्त्री—संस्कृत साहित्य का नवीन इतिहास,  
(प्रकाशक—आयं बुक डिपो, करौल बाग, नई दिल्ली-5,  
मू. 4.50) ।
- ( v ) श्री हंसराज अग्रवाल - संस्कृत साहित्य का संक्षिप्त इतिहास  
(द्वितीय संस्करण) ।  
(प्रकाशक—मेहर चन्द लक्ष्मणदास, दिल्ली-6) ।
- ( vi ) श्री बी. वरदाचारी—संस्कृत साहित्य का इतिहास  
(प्रकाशक—श्री रामनारायण लाल, इलाहाबाद) ।
- ( vii ) बलदेव उपाध्याय—संस्कृत साहित्य का इतिहास ।

2. व्याकरण (सूत्रात्मक शैली के अनुसार) ।

सज्ञा प्रकरण तथा संधि प्रकरण के चुने हुए विशिष्ट सूत्र ।

लघु सिद्धान्त कौमुदी (सन्धि प्रकरण) । 15 अंक

अर्च सन्धि—निम्नलिखित सूत्रों पर ही प्रश्न पूछे जाएँगे :—

- (1) इको यणचि 611177 (2) तस्मिन्निति निदिष्टे पूर्वस्य 111166
- (3) स्थानेऽन्तरतमः 111150 (4) भलां जश् भशि 814153
- (5) एचोऽयवायावः 611178 (6) अदेङ् गुणः 11112 (7) आद्गुणः 611187
- (8) उरण् रपरः 111151 (9) लोपः शाकल्यस्य 813119
- (10) वृद्धिरादैच् 11111 (11) वृद्धिरेचि 611188 (2) एत्येधत्पूर्वसु 611189
- (11) एङि पररूपम् 611194 (14) अचोऽन्त्यादि टि 111164
- (15) अकःसवर्णो दीर्घः 6111101 (16) एङः पदान्तादति 6111109

- (17) दूरादङ्गते च 812184 (18) प्लुतप्रगृह्या अचि नित्यम् 611125  
(19) ईद्वेद् द्विवचनं प्रगृह्यम् 1/1/11 ।

हल् सन्धि :

- (20) स्तोऽङ्गुना ङ्गुः 814140 (21) प्लुता प्लुः 814141 (22) क्लान्तं जङ्गोऽन्ते 812139 (23) यरोऽङ्गुनासिकेऽङ्गुनासिको वाः 814145 (24) तोलि 814160 (25) ऋरो ऋरि सवर्णं 814165 (26) खरि च 814155 (27) ऋयो ह्यङ्गुतरस्यान् 814162 (28) यदङ्गोऽङ्गि 814163 (29) मोऽङ्गुस्वारः 813123 (30) नश्चाऽनदान्तस्य ऋति 813124 (31) अनुस्वारस्य ययि परसवर्णः 814158 (32) ऊमो ह्रस्वादचि ऊम्ण् नित्यम् 813132 (33) खरवसानयोर्विसर्जनीयः 813115 (34) द्वे च 611173 ।

विसर्ग सन्धि :

- (35) विसर्जनीयस्य सः 813134 (36) वासरि 813136 (37) सप्तद्वयो रः 812166 (38) असोरोरप्लुतादप्लुते 611113 (39) ह्रिचि च 611114 (40) ओ-भङ्गो-अवो अपूर्वस्य योऽङ्गि 813117 (41) हलि सर्वेषाम् 813122 (42) रो रि 813114 (43) ह्रलोपे पूर्वस्य दीर्घोऽङ्गः 613111 (44) एतत्तदोः सुलोपोऽङ्गोरनञ्चनासे हलि 611132.

सामान्य ज्ञान — समास, कृदन्त प्रत्यय तथा स्त्री प्रत्यय का प्रयोगात्मक ज्ञान । तव्य, अनीयर्, यत्, तुमुन्, प्लुन्, वृच्, णिनि, त्यप्, क्त्वा, क्त, क्तवत्, शतृ, शानच्, अण्, घञ्, क्तिन्, लृट्, खद्यु, खच् 15 अंक

(iii) अनुवाद—(हिन्दी से संस्कृत में) । 15 अंक

(iv) निबन्ध—संस्कृत भाषा में 50 पंक्तियों में विवरणात्मक, विवेचनात्मक, वर्णनात्मक तथा जीवनचरितात्मक विषयों पर निबन्ध । 15 अंक

सहायक ग्रन्थ :

सद्यु सिद्धान्त कौमुदी ।

अनुवाद तथा निबन्ध :

( i ) संस्कृत निबन्ध-पद्यप्रदर्शक—आष्टे । अनुवादक ( श्री रामकृष्ण शुक्ल ) ( रामनारायण लाल, इलाहाबाद ) ।

( ii ) रचनानुवाद-कौमुदी—डा. कपिलदेव द्विवेदी ( विश्वविद्यालय प्रकाशन, गोरखपुर ) ।

- (iii) संस्कृत रचनानुवाद-प्रभा — श्रीनिवास शास्त्री ।  
 (iv) संक्षिप्त लघु-कौमुदी — श्रीनारायण शास्त्री कांकर (प्राप्ति स्थान — रमेश बुक डिपो, त्रिपोलिया बाजार, जयपुर) ।  
 (v) स्नातक संस्कृत व्याकरण — नेमिचन्द्र शास्त्री, (ज्ञानदा प्रकाशन, पटना) ।

#### 4. SANSKRIT LITERATURE (Hons.)

B.A. Hons. Pt. II

*Scheme :*

Two Papers	Duration	Max. Marks	Min. Pass marks
Paper III	3 hrs.	100	80
Paper IV	3 hrs.	100	

पाठ्यक्रम :

तृतीय पत्र — नाटक, छन्द तथा काव्यशास्त्र

- (i) नाटक — अभिज्ञानशाकुन्तलम् — कालिदास (निरणय-सागर टेक्स्ट) (अनुवाद, व्याख्या तथा समालोचनात्मक प्रश्न) 60 अंक  
 (ii) छन्द — अभिज्ञानशाकुन्तलम् में प्रयुक्त छन्द (समस्त) सहायक पुस्तक — छन्दशाकुन्तलम् — शिवसागर त्रिपाठी 10 अंक  
 (iii) काव्यशास्त्र — काव्यदीपिका — पंचम से अष्टम शिखा 30 अंक

#### 4. SANSKRIT LITERATURE (Hons.)

*Scheme :*

Two Papers	Duration	Max. maks	Min. Pass marks
Paper III	3 hrs.	100	80
Paper IV	3 hrs.	100	

चतुर्थ पत्र — भारतीय संस्कृति के तत्त्व, व्याकरण तथा अनुवाद

- (i) भारतीय संस्कृति के तत्त्व — भारतीय संस्कृति, विषय, पृष्ठभूमि, मूलभूत विशेषताएं तथा विकास की रूप-रेखा (पूर्व वैदिक काल से आधुनिक काल तक) 45 अंक  
 (ii) व्याकरण (सूत्रात्मक शैली के अनुसार) कृदन्त, समास तथा स्त्रीप्रत्यय प्रकरण (लघुकौमुदी के चुने हुए सूत्रों की व्याख्या) 55 अंक

(iii) अनुवाद

20 अंक

भारतीय संस्कृति के तत्त्व :—

वर्ण, आश्रम, संस्कार, लेखनकला की उत्पत्ति तथा विकास, वैदिक काल से सातवीं शताब्दी तक प्राचीन भारत में शिक्षा, राजनैतिक संगठन तथा लोकप्रशासन, भारतीय संस्कृति का मानव-कल्याण के लिए योगदान, विज्ञान दर्शन एवं साहित्य के संदर्भ में भारतीय संस्कृति का प्रसार ।

सहायक पुस्तकें

शिवदत्त ज्ञानी—भारतीय संस्कृति

रामचारीसिंह 'दिनकर'—संस्कृति के चार अव्याय

पी. के. आचार्य—भारतीय सभ्यता तथा संस्कृति

बलदेव कृष्ण—भारतीय संस्कृति

Macdonell—India's Past.

निर्धारित सूत्र

(i) कृदन्त प्रकरण—34 सूत्र (ii) समास प्रकरण—29 सूत्र

(iii) स्त्रीप्रत्यय—10 सूत्र

(ii) व्याकरण—सूत्रात्मक शैली

कृदन्त, समास तथा स्त्री-प्रत्यय ( लघुसिद्धान्तकौमुदी ) के प्रमुख चुने हुए सूत्र (सूत्रात्मक शैली)

(i) कृदन्त प्रकरण—(1) वातोः 311191 (2) वाऽनहोऽस्त्रियाम् 311194 (3) कृत्याः 311195 (4) कर्तरि कृत् 314167 (5) तयोरेव कृत्यक्त-खलयाः 314170 (6) तव्यत्तव्यानीधिरः 311196 (7) कृत्यल्युटो बहुलम् 3131113 (8) अचो यत् 311197 (9) पोरदुषवाद् 311198 (10) एतित्तु शाल्वृद्वृणुषः क्यप् 3111109 (11) ऋहलोऽप्यन्त् 3111124 (12) ष्वल् वृचौ 3111133 (13) दुबोरनाकौ 71111 (14) नन्दिग्रहिषचादिभ्यो ल्युणिन्यचः 1111134 (15) इगुपवजाप्रीकिरः कः 3111135 (16) कर्मण्यल् 31211 (17) सुप्यजातौ णिनिस्ताच्चीत्ये 312178 (18) क्तकवत् निष्ठा 1111126 (19) निष्ठा 3121102 (20) रदान्यां निष्ठातो नः पूर्वस्य च दः 812142 (21) त्रिटः कानज्वा 3121106 (22) क्वमुश्च 3121107 (23) लटः शतृज्ञानचाव प्रयमा समानाधिकरणे 3121124 (24) तुमुन्तुचौ क्रियायां क्रियायायाम् 513110 (25) भावे 313118 (26) यजयाचयतविच्छ्रप्रच्छ्रखो नङ् 313190 (27) उपतर्गे वोः क्तिः 313192 (28) स्त्रियां क्तिन् 313194 (29) लुट् च

3131115 (30) ईषदुस्सुपु कृच्छाकृच्छायैषु खल् 3131126 (31) समानकर्तृ-  
कयोः पूर्वकाले 314121 (32) समासेऽनन्पूर्वे क्तवो ल्यप् 711137 (33)  
आभीक्ष्ण्ये एमुल् च 314122 (34) नित्यंवीप्सयोः 81114

(ii) समास प्रकरण — सह सुपा 21114 (2) अव्ययं विभक्तिसमीप  
समृद्धि व्युद्ध्यर्थी भावात्ययासंप्रतिशब्दप्रादुर्भावं पश्चाद् यथानुपूर्व्यं यौगपद्यसादृश्य  
सम्पत्तिसाकल्यान्तवचनेषु 21116 (3) प्रथमानिदिष्टं समास उपसर्जनम् 112143  
(4) उपसर्जनं पूर्वम् 212130 (5) अव्ययीभावश्च 214118 (6) अव्ययीभावे  
चाकाले 613181 (7) कर्तृकरणे कृता बहुलम् 211132 (8) चतुर्थी तदर्थार्थं  
वलिहितसुखरक्षितैः 211136 (9) तद्धितार्थोत्तरपदसमाहारे च 211151  
(10) तत्पुरुष समानाधिकरणः कर्मधारयः 112142 (11) संख्यापूर्वो द्विगुः  
211152 (12) द्विगुरेकवचनम् 21411 (13) स नपुंसकम् 314117  
(14) विशेषणं विशेष्येण बहुलम् 211157 (15) उपमानानि सामान्यवचनैः  
211155 (16) नञ् 21216 (17) नपोलो नञः 613173 (18) तस्मान्नुडचि  
613174 (19) परवल्लिगं द्वन्द्वतत्पुरुषयोः 214126 (20) अनेकमन्यपदायै  
212124 (21) सप्तमी विशेषणे बहुव्रीहौ 212135 (22) हलदन्तात्सप्तम्याः  
संज्ञायाम् 61319 (23) निष्ठा 2121136 (24) चार्थे द्वन्द्वः 212129  
(25) द्वन्द्वेचि 212132 (26) अजाद्यदन्तम् 212133 (27) अल्पाक्षरम्  
212134 (28) पितामात्रा 112170 (29) द्वन्द्वश्च प्राणितूर्यसेनाङ्गानाम्  
214121

(iii) स्त्री प्रत्ययप्रकरणम् — अजाद्यतष्टाप् 41114 (2) उगितश्च  
41116 (3) टिड्ढाणञ्द्वयसज्दघ्नञ् मात्राक्षतयष्टकृञ्कञ्क्वरपः 411115  
(4) पिद् गौरादिश्यश्च 411141 (5) पुंयोगादाह्वयाम् 411148 (6)  
इन्द्रवरुणभवशर्वरुद्रमृडहिमारण्ययवयवनमातुलाचार्याणामानुक् 411149 (7) जाते-  
रस्त्रीविषयादयोपघात् 411163 (8) ऊङ् उत्तः 411166 (9) शाङ्गं र्वाद्यञो  
डीन् 411173 (10) यूनस्तिः 411177 ।

(iii) अनुवाद—

20 अंक

#### 4. SANSKRIT LITERATURE (Hons.) B.A. Hons. Part III

Scheme :

Papers	Duration	Max. marks	Min. Pass marks
Paper V	3 hrs.	100	160
Paper VI	3 hrs.	100	
Paper VII	3 hrs.	100	
Paper VIII	3 hrs.	100	



## Syllabus :

ऑनर्स पंचम पत्र—गद्य साहित्य

पाठ्य पुस्तकें—

1. दशकुमारचरितम्—दण्डी (अष्टमोच्छ्वास उत्तरपीठिका सहित) 22 अंक
2. कुकुनासोपदेश (कादम्बरी से) 21 अंक
3. शिवराजविजय (प्रथम निव्वास)—श्री अम्बिकादत्त व्यास 21 अंक
4. अमिनव-कथा-निकुंज—सं० शिवदत्त चतुर्वेदी, ( प्रथम पांच कथाएँ मात्र ) 21 अंक
5. सनीशात्मक प्रश्न 15 अंक

## 4. SANSKRIT LITERATURE (Hons.)

## Scheme :

Papers	Duration	Max. marks	Min. Pass marks
Paper V	3 hrs.	100	160
Paper VI	3 hrs.	100	
Paper VII	3 hrs.	100	
Paper VIII	3 hrs.	100	

## Syllabus :

ऑनर्स - षष्ठ पत्र—वैदिक साहित्य (संहिता, ब्राह्मण, उपनिषद् साहित्य)

पाठ्य अंश :

1. संहिता—

( i ) ऋग्वेद—1/32, 1/89, 7/86, 8/58, 10/71, 10/79  
एवं 10/81 = 7 सूक्त 28 अंक

पाठ्य पुस्तकें :

- (i) ऋक् सूक्तानि—डॉ सुधीर कुमार गुप्त
- (ii) अथर्ववेद—पृथ्वी-सूक्त मात्र

पाठ्य पुस्तकें :

सूक्तारण्य-संग्रह—डॉ. गोपाल चन्द्र मिश्र, वाराणसी

(iii) वाजसनेयी मा० संहिता—36वां तथा 40 वां प्रध्याय

(ईशावास्योपनिषद्)

15 अंक

2. ब्राह्मण (iv) शतपथ ब्राह्मण—मनुष्याख्यान 1/8 से  
1/11 तक 7 अंक
3. उपनिषद् (v) कठोपनिषद् (प्रथमाध्याय)  
(vi) माण्डूक्योपनिषद् (संपूर्ण)  
(vii) श्वेताश्वतरोपनिषद् (तृतीयाध्याय) 21 अंक
4. समालोचनात्मक प्रश्न—वैदिक साहित्य के सम्बद्ध 14 अंक

सहायक ग्रंथ—

1. वैदिक साहित्य और संस्कृति—बलदेव उपाध्याय
2. वैदिक साहित्य—रामगोविन्द त्रिवेदी
3. History of Sanskrit Literature Chap. 2-9 Macdonell
4. वैदिक स्वर-बोध—ब्रजविहारी चौधे । VVORI Hoshiarpur.

#### 4. SANSKRIT LITERATURE (Hons.)

Scheme :

Two Papers	Duration	Max. Marks	Min. Pass Marks.
Paper V	3 hrs.	100	160
Paper VI	3 hrs.	100	
Paper VII	3 hrs.	100	
Paper VIII	3 hrs.	100	

Syllabus :

ग्रॉनर्स-सप्तम पत्र—भारतीय दर्शन

1. योगदर्शन (विभूतिपाद को छोड़कर) 30 अंक
2. तर्कसंग्रह—अन्नभट्ट 30 अंक
3. शांकर वेदांत और मीमांसा दर्शन पर समालोचनात्मक प्रश्न— 40 अंक

सहायक ग्रंथ—

- (1) उमेश मिश्र : भारतीय दर्शन
- (2) बलदेव उपाध्याय : भारतीय दर्शन

#### 4. SANSKRIT LITERATURE (Hons.)

Scheme :

Two Papers	Duration	Max. Marks	Min. Pass marks.
Paper V	3 hrs.	100	160
Paper VI	3 hrs.	100	
Paper VII	3 hrs.	100	
Paper VIII	3 hrs.	100	

प्रॉनर्स अष्टम पत्र—धर्मशास्त्र, द्रुतपाठ, अनुवाद, व्याकरण व रचना

1. (i) धर्मशास्त्र (i) मनुस्मृति—द्वितीय अध्याय 15 अंक  
(ii) याज्ञवल्क्यस्मृति—प्रथम से  
पंचम प्रकरण तक 15 अंक  
(ii) द्रुतपाठ—भगवद्गीता—द्वितीय अध्याय 10 अंक
2. इंदुमतीस्वयंवरवर्णनम्-रघुवंश VI (पष्ठ) सर्ग 20 अंक  
(iii) व्याकरण (सूत्रात्मक शैली के अनुसार) 20 अंक  
(अ) तद्धित प्रकरण के चुने हुए 65 सूत्र 10 अंक  
(ब) कारक प्रकरण के चुने हुए 80 सूत्र 10 अंक

- (i) तद्धित-प्रत्यय-प्रकरणम्—(1) अश्वपत्यादिभ्यश्च 4।1।84  
(2) दित्यदित्यादित्यपत्युत्तरपदाण्यः 4/1/85 (3) हलो यमां यमि लोपः 8।4।64  
(4) स्त्रीपुंसाभ्यां नञ्स्तनौ भवनात् 4/1/8 (5) ओर्गुणः 6/4/146 (6)  
गर्गादिभ्यो यञ् 4/1/105 (7) यमिबोश्च 2।4।64 (8) आर्यानेयीनीयियः  
फट्छद्धां प्रत्ययादीनाम् 7/1/2 (9) अत इञ् 4/1/95 (10) स्त्रीभ्यो ढक्  
4/1/120 (11) नञ्त्रेण युक्तः कालः 4/2/3 (12) सास्य देवता 1/2/24  
(13) मिक्षादिभ्योऽण् 4/2/38 (13) ग्रामजनवन्बुभ्यस्तल् 4/2/43 (15)  
क्रमादिभ्यो वुन् 4/2/61 (16) तदस्मिन्नस्तीतिदेशे तन्नाम्नि 4।2।67 (17)  
तस्य निवासः 4।2।69 (18) शेषे 4।2।92 (19) राष्ट्रवारपाराद् घञौ 4।2।93  
(20) ग्रामाद्यन्तौ 4/2/94 (21) नद्यादिभ्यो ढक् 4/2/97 (25) अव्ययात्त्यप्  
4/2/104 (3) वृद्धिर्यस्याचामादिस्तद् वृद्धम् 1/1/73 (24) वृद्धाच्छः  
4/2/114 (25) युष्मदस्मदोरन्यतरस्यां खञ् च 4/3/1 (26) तवकममकावेक-  
वचने 4/3/3 (27) प्रत्ययोत्तरपदयोश्च 7/2/98 (28) तत्र जातः 4/3/25  
(29) तस्य विकारः 4/3/134 (30) गोश्च पुरीषे 4/3/145 (31) गोपयसौर्यत्  
4/3/160 (32) तेन दीव्यति, खनति जयति जितम् 4/4/2 (33) रक्षति  
4/4/33 (34) धर्मं चरति 4/4/41 (35) तत्र साधुः 4/4/98 (36) शरीरा-  
वयवाद्यत् 5/1/6 (37) तेन निवृत्तम् 5/1/79 (38) तस्यभावस्त्वतलौ  
5/1/119 (39) हैयङ्गवीनं संजायान् 5/2/23 (40) प्रयागे द्वयसञ् दध्नञ्  
मात्रचः 5/2/37 (41) यत्तदेतेभ्यः परिमाणे वतुप् 5/2/39 (42) किमिदंभ्यां  
वो घः 5/2/40 (43) इदं किमोरीशुकी 6/3/90 (44) तस्य पूरणे ढट्  
5/2/48 (45) तदस्यास्त्यस्मिन्निति मनुप् 5/2/94 (46) अत इनिठनी  
5/2/115 (47) पञ्चम्यास्तसिल् 4/3/7 (48) कुत्तिहोः 7/2/104 (49)  
सप्तम्यास्त्वल् 5/3/10 (50) सर्वस्य सोऽन्यरस्यां दि 5/3/6 (51) इदमोहिल्

- 5/3/16 (52) अनद्यत्ने हिलन्यतरस्याम् 5/3/21 (53) प्रकारवचने आल्  
 5/3/23 (54) अतिशायने तमविष्णुनी 5/3/55 (55) तिङ्श्च 5/3/56  
 (56) तरप्तमपौ घः 1/1/22 (57) द्विवचनविभज्योपपदे तरदीयसुतो 5/3/57  
 (58) प्रवस्यस्य अः 5/3/60 (59) प्रकृत्यैकाच् 6/4/163 (60) ज्य च  
 5/3/61 (61) ज्यादादीयसः 6/4/160 (62) तत् प्रकृतवचने मयट् 5/4/21  
 (63) कृन्वस्तियोगे संपद्यकर्तरि न्विः 5/4/50 (64) अस्य च्वौ 7/4/32  
 (65) च्वौ च 7/4 26 ।

(ii) कारकप्रकरणम् (सिद्धान्तकौमुदीतः) — (1) प्रातिपादिकार्यलिङ्ग  
 परिमाणवचनमात्रे प्रथमा 2/3/46 (2) कर्तुरीप्सिततमं कर्म 1/4/49  
 (3) कर्मणि द्वितीया 2/3/2 (4) तथायुक्तं चानीप्सितम् 1/4/50  
 (5) अकथितं च 1/4/51 (6) गतिवृद्धिप्रत्यवसानार्थशब्दकर्मकारणामणि  
 कर्ता स एव 1/4/52 (7) अविशीङ् स्थातां कर्म 1/4/46 (8) उपाग्वध्याङ् वसः  
 1/4 48 (9) अन्तरान्तरेण युक्ते 2/3 4 (10) लक्षणेत्वंभूताह्वानभागवी  
 प्लासु प्रतिपर्यन्तवः 1/4/90 (11) कालाध्वनोरत्यन्तसंयोगे 2/3/5 (12)  
 साधकतमं करणम् 1 4/42 (13) कर्तृकरणयोस्तृतीया 2/3/18 (14) अपवर्गो  
 तृतीया 2/3/6 (15) सहयुक्तेऽप्रधाने 2/3/19 (16) येनाङ्गविकारः 2/3/20  
 (17) इत्वंभूतलक्षणे 2/3/21 (18) हेतो 2/3/23 (19) कर्मणा यमभिप्रैति  
 स सम्प्रदानम् 1/4/32 (20) रच्यर्थानां प्रीयमाणः 1/4/33 (21) कृद्ब्रु-  
 हेर्प्याभूयार्थानां यं प्रति कोपः 1/4/37 (22) परिक्रयणे सम्प्रदानमन्यतरस्याम्  
 1/4/44 (23) क्रियार्थोपपदस्य च कर्मणि स्यानिनः 2/3/14 (24) नमः  
 स्वस्तिस्वाहास्ववाऽलंबप्रयोगाच्च 2/3/16 (25) ब्रूवमपायेऽसादानम् 1/4/24  
 (26) भीत्रार्थानां भयहेतुः 1/4/25 (27) वारणार्थानामीप्सितः 1/4/27  
 (28) जनिकर्तुः प्रकृतिः 1/4/30 (29) विभाषा गुरोऽस्त्रियाम् 2/3/25  
 (30) पृथग्विना नानामिस्तृतीयान्यतरस्याम् 2/3/32 (31) पष्ठी द्वेपे 2/3/50  
 (32) अधीगर्धदेशां कर्मणि 2/3/52 (33) कर्तृकर्मणोःकृति 2/3/65 (34) न  
 लोकाव्ययनिष्ठास्त्रल्लयंतृणान् 2/3/69 (35) आघातोऽधिकरणम् 1/4/45  
 (36) सप्तम्यधिकरणे च 2/3/35 (37) यस्य च भावेन भावलक्षणम् 2/3/37  
 (38) पष्ठी चानादरे 2/3/38 (39) यतश्च निर्धारणम् 2/3/41 (40) साधु-  
 निपुणाभ्यामर्चायां सप्तम्यप्रतेः 2/3/43 ।

(iv) अनुवाद - हिन्दी अथवा अंग्रेजी से संस्कृत में । 10 अंक

(v) रचना—संस्कृत भाषा में निबन्ध या पत्र लेखनादि । 10 अंक

## एम०ए० संस्कृत (पूर्वाद्धि) परीक्षा

(एन्युअल स्कीम)

इस परीक्षा में चार प्रश्न-पत्र होंगे। प्रत्येक का पूर्णांक 100 तथा समय की अवधि तीन घण्टे निर्धारित हैं। प्रत्येक प्रश्न-पत्र में 20 प्रतिशत अंक के प्रश्न संस्कृत भाषा के माध्यम से उत्तर प्रस्तुत करने के लिए सुरक्षित किये गये हैं।

प्रथम पत्र :—

वैदिक साहित्य और तुलनात्मक भाषाविज्ञान के तत्त्व (Vedic Literature & Elements of Comparative Philology)

इस प्रश्न-पत्र का अंक-विभाजन निम्नलिखित रूप में होगा :—

(क) ( i ) वेद	50	} 100 अङ्क
( ii ) निरुक्त	20	
(ख) भाषा विज्ञान	30	

द्वितीय पत्र :— ललित साहित्य, सम्बद्ध व्याकरण तथा अलंकार।

टिप्पणी :— 'मुद्राराक्षस' नाटक से प्राकृत भाषा के 2 अवतरणों में से किसी एक अवतरण का संस्कृत में पाठ-परिवर्तन सम्बन्धी प्रश्न पूछा जायेगा जो 4 अंक का होगा।

इस प्रश्न-पत्र के अङ्क विभाजन का प्रारूप निम्नांकित है।

( i ) काव्य	30 अङ्क	} 100 अङ्क
( ii ) नाटक	15 अङ्क	
( iii ) गद्य	15 अङ्क	
( iv ) प्राचीन लेख	4 अङ्क	
( v ) प्राकृत	4 अङ्क	
( vi ) अलंकार	20 अङ्क	
( vii ) सम्बद्ध व्याकरण	12 अंक	

तृतीय पत्र :

भारतीय दर्शन

इस प्रश्न-पत्र के अङ्क-विभाजन का प्रारूप इस प्रकार होगा :—

( i ) सांख्य दर्शन	20 अङ्क	} 100 अङ्क
( ii ) न्याय दर्शन	30 अङ्क	
( iii ) वेदान्त दर्शन	25 अङ्क	
( iv ) चार्वाक दर्शन	5 अङ्क	
( v ) जैन दर्शन	20 अङ्क	

चतुर्थ पत्र : -

प्राचीन भारत का साहित्यिक एवं सांस्कृतिक इतिहास, व्याकरण तथा अनुवाद ।

(अ) प्राचीन भारत का साहित्यिक एवं सांस्कृतिक इतिहास—

(1) वैदिक साहित्य का इतिहास	20 अङ्क	100 अङ्क
(2) पौराणिक, आधुनिक तथा शास्त्रीय साहित्य का इतिहास	20 अङ्क	
(3) प्राचीन भारत का सांस्कृतिक इतिहास	20 अङ्क	
(आ) इतिहास पर टिप्पणी (संस्कृत में)	10 अङ्क	
(इ) व्याकरण	20 अङ्क	10 अङ्क
(ई) अनुवाद	10 अङ्क	

### एम०ए० (उत्तराद्ध) परीक्षा

इस परीक्षा के चार प्रश्न-पत्र होंगे । प्रस्तावित विषय वर्गों में से एक वर्ग का चयन करना होगा, जिसके तीन पत्र निर्धारित हैं । शेष दो पत्र सभी के लिए सामान्य एवं अनिवार्य हैं । सभी पत्रों का समय तीन घण्टे की अवधि का रहेगा तथा सभी पत्र 100 अङ्क के निश्चित किये गये हैं । प्रत्येक प्रश्न-पत्र में 20 प्रतिशत अङ्क संस्कृत भाषा के माध्यम से उत्तर प्रस्तुत करने हेतु सुरक्षित हैं । चतुर्थ व पंचम पत्र में यह नियम लागू नहीं है ।

परीक्षार्थी चाहें तो वे उत्तराद्ध के तृतीय प्रश्न-पत्र के स्थान पर लघु-शोध-प्रबन्ध भी लिख सकते हैं ।

### वर्ग (अ) साहित्य

प्रथम पत्र :—संस्कृत काव्य शास्त्र (Sanskrit Poetics) एवं अलंकार शास्त्र का इतिहास

( i ) संस्कृत काव्य-शास्त्र—

(क) काव्यप्रकाश	50 अंक	100 अंक
(ख) ध्वन्यालोक	20 अंक	
(ग) वक्रोक्तिजीवितम्	20 अंक	

( ii ) अलंकार शास्त्र का इतिहास 10 अंक

द्वितीय पत्र :—नाटक एवं नाट्य-शास्त्र

( i ) नाटक

65 अङ्क	100 अङ्क
( ii ) नाट्य-शास्त्र	

35 अङ्क

तृतीय पत्र :—काव्य (गद्य एवं पद्य साहित्य)

( i ) गद्य काव्य	40 अङ्क }	100 अङ्क
( ii ) पद्य काव्य	45 अङ्क }	
( iii ) चम्पू काव्य	15 अङ्क }	

अथवा

आधुनिक संस्कृत साहित्य

अथवा

किसी भी कवि अथवा लेखक (निर्धारित) का विशेष अध्ययन ।

अथवा

लघु शोध-प्रबन्ध (Dissertation) (स्वयंपाठी छात्रों के लिए नहीं)

वर्ग (व) वैदिक साहित्य

प्रथम पत्र—संहिता पाठ

( i ) ऋग्वेद	35 अङ्क }	100 अङ्क
( ii ) अथर्ववेद	30 अङ्क }	
( iii ) यजुर्वेद	20 अङ्क }	
( iv ) शेष	15 अङ्क }	

द्वितीय पत्र—ब्राह्मण, उपनिषद् तथा वैदिक सहायक ग्रन्थ

( i ) ब्राह्मण एवं उपनिषद् साहित्य	50 अङ्क }	100 अङ्क
( ii ) निरुक्त	35 अङ्क }	
( iii ) प्रातिशाख्य	15 अङ्क }	

तृतीय पत्र :—वैदिक धर्म का तुलनात्मक विवेचन एवं देवशास्त्र

( i ) वैदिक पुराणशास्त्र (Vedic Mythology)	50 अङ्क }	100 अङ्क
( ii ) तुलनात्मक धर्म (Comparative Religion)	30 अङ्क }	
( iii ) बृहदेवता	20 अङ्क }	

अथवा

निर्धारित किसी एक ऋषि के मण्डलों का अध्ययन ।

अथवा

लघु शोध-प्रबन्ध (Disseration) (स्वयंपाठी छात्रों के लिए नहीं । )

## वर्ग (स) दर्शन शास्त्र

प्रथम पत्र :—न्याय और वैशेषिक दर्शन	100 अङ्क
द्वितीय पत्र :—सांख्य, आगम एवं व्याकरण दर्शन	100 अङ्क
तृतीय पत्र :—वेदान्त और नीमांसा दर्शन	100 अङ्क

अथवा

लघु शोध-प्रबन्ध (Dissertation) (स्वयंपाठी छात्रों के लिए नहीं)

## वर्ग (द) धर्मशास्त्र

प्रथम पत्र :—सूत्र और नीमांसा	100 अङ्क
द्वितीय पत्र :—स्मृति	100 अङ्क
तृतीय पत्र :—धर्मशास्त्र का इतिहास तथा सम्बद्ध साहित्य	100 अङ्क

अथवा

लघु शोध-प्रबन्ध (Dissertation) (स्वयंपाठी छात्रों के लिए नहीं)

## वर्ग (ई) पालि तथा प्राकृत

प्रथम पत्र :—पालि तथा अर्द्ध-भाषावी	100 अंक
द्वितीय पत्र :—महाराष्ट्री तथा शौरसेनी	100 अङ्क
तृतीय पत्र :—पालि तथा प्राकृत का इतिहास तथा व्याकरण	100 अङ्क
चतुर्थ पत्र :—व्याकरण, अनुवाद एवं निबन्ध (सभी वर्गों के लिए अनिवार्य)	

( i ) व्याकरण	40 अङ्क	} 100 अङ्क
( ii ) अनुवाद	20 अङ्क	
( iii ) निबन्ध	15 अङ्क	
( iv ) अपठित तथा व्युत्पत्ति-प्रदर्शन	25 अङ्क	

पंचम पत्र :—मौखिक परीक्षा	100 अङ्क
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अथवा

मौखिक परीक्षा के स्थान पर लिखितपत्र	100 अङ्क
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अवधेयम् :

- ( i ) प्रत्येक प्रश्न पत्र में निर्धारित पाठ्य-विषयों अथवा ग्रन्थों के इतिहास से सम्बद्ध प्रश्न भी पूछे जायेंगे, जिनसे परीक्षार्थी के तत्सम्बन्धी ज्ञान का परिज्ञान हो सके ।
- ( ii ) प्रत्येक प्रश्न-पत्र हिन्दी भाषा के माध्यम से बनाया जायेगा । परन्तु परीक्षार्थी को यह छूट है कि वह उस प्रश्न-विषय के अतिरिक्त जिसका उत्तर परीक्षक ने संस्कृत में



मांगा है, सभी प्रश्नों के उत्तर हिन्दी, अंग्रेजी अथवा संस्कृत भाषा के माध्यम से प्रस्तुत कर सकता है।

### एम. ए. (पूर्वाह्न) परीक्षा पाठ्यक्रम (Syllabus)

प्रथम पत्र :—वैदिक साहित्य और तुलनात्मक भाषा विज्ञान के तत्त्व :

(Vedic Literature and Elements of Comparative Philology) :

समय 3 घण्टे

पूर्णाङ्क 100

(क) वैदिक साहित्य : 50 अंक

(i) निम्नांकित सूक्त अध्ययन के लिए निर्धारित हैं—

1. (1) अग्नि (1/1) (2) सवितृ (1/35) (3) मरुत् (1/85)  
(4) रुद्र (2/33) (5) अपानपात् (2/35) (6) मित्र (2/59)  
(7) उपस् (4 51) (8) पर्जन्य (5/83) 25 अङ्क

2. (9) अश्विनो (7/71) (10) वरुण (7/86) (11) सोम (8/48)  
(12) पितरः (10/15) (13) अजसूक्त (दि गैम्बलर) (10/34)  
(14) पुरुष (10/90) (15) नासदीय (10/129) 25 अंक  
(Hymns of creation)

(ii) निरुक्त—यास्क (प्रथम अध्याय मात्र) 20 अंक

सहायक पुस्तकें :

(i) ऋक् सूक्तवैजयन्ती—डॉ. एच. डी. वेलणकर (पूना से प्रकाशित)

(ii) ऋक् सूक्त-समुच्चय—डॉ. रामकृष्ण आचार्य  
प्रकाशक—विनोद पुस्तक मन्दिर, आगरा।

(iii) वैदिक वाङ्मय—एक परिशीलन—ब्रजविहारी चौबे

(iv) वैदिक स्वर-शोध—ब्रजविहारी चौबे

(v) वैदिक रीडर—एम. ए. मैकडोनाल्ड (अॉक्स.)

(vi) वैदिक व्याकरण—ए. ए. मैकडोनाल्ड

(vii) वैदिक व्याकरण—डा. नमोचन्द्र पाण्डे

(viii) वैदिक स्वरभीमांसा श्री बुधिष्ठिर मीमांसक

(ix) ऋग्वेद-चयनिका—विश्वम्भर नाथ त्रिपाठी

(x) ऋक्सूक्त-संग्रह—हरिदत्त शास्त्री।

(ख) तुलनात्मक भाषा-विज्ञान के तत्त्व :

30 अंक

रूपरेखा, क्षेत्र, भाषा की प्रकृति और कार्य, उच्चारण-संस्थान, ध्वनियाँ-स्वर तथा व्यंजन ध्वनि, वर्गीकरण ध्वनि-परिवर्तन—कारण और दिशाएँ । ध्वनि-नियम, भाषाओं का वर्गीकरण ( भारोपीय भाषा परिवार के सन्दर्भ में ) एवं अर्थ विज्ञान ।

टिप्पणी :—( i ) प्रश्न-पत्र आदि में श्री भोलानाथ तिवारी रचित “भाषा विज्ञान” में प्रयुक्त हिन्दी पारिभाषिक शब्दावली प्रयोग में लायी जाय ।

(ii) संस्तुत पुस्तकों से पाठ्यक्रम से सम्बद्ध अंश ही पढ़ने अपेक्षित हैं ।

संस्तुत पुस्तकें :—

- ( i ) गुणो—एन इन्ट्रोडक्शन टू कम्पैरेटिव फिलोलोजी (ओरियण्टल बुक एजेंसी, पूना)
- ( ii ) वटकृष्ण घोष—लिंग्विस्टिक इन्ट्रोडक्शन टू संस्कृत (इण्डियन रिसर्च इन्स्टीट्यूट, 170 माणिकतल्ला स्ट्रीट, कलकत्ता) ।
- (iii) डा. मंगलदेव शास्त्री—तुलनात्मक भाषा-शास्त्र ।
- (iv) डा. भोलानाथ तिवारी—भाषा-विज्ञान ।
- ( v ) डा. भोलाशंकर व्यास—संस्कृत का भाषा-शास्त्रीय अध्ययन (भारतीय ज्ञानपीठ, काशी, मूल्य 5.00)
- (vi) संस्कृत भाषा-विज्ञान—डा. राजकिशोर सिंह (विनोद पुस्तक मन्दिर, आगरा)
- (vii) तारापोखाला—एलिमेंट्स ग्राफ दी साइन्स ग्राफ लैंग्वेज (हिन्दी अनुवाद) (मध्य प्रदेश हिन्दी ग्रन्थ-अकादमी)
- (viii) भाषा का इतिहास—श्री भगवद्दत्त
- ( ix ) T. Burrow—संस्कृत-भाषा ।

द्वितीय पत्र—जलित साहित्य तथा व्याकरण ( Classical Literature and Grammar ) :—

समय 3 घण्टे

पूर्णांक—100

नोट :—व्याख्या के अन्तर्गत रेखाङ्कित पदों पर व्याकरणात्मक टिप्पणी भी अपेक्षित होगी ।

1. कालिदास—मेघदूत 15 अंक
2. माघ—शिशुपालवध (द्वितीय सर्ग) 15 अंक
3. विशाखदत्त—मुद्राराक्षस 15 अंक
4. वाणभट्ट—कादम्बरी  
प्रारम्भ से जावाल्याश्रम-वर्णन से पूर्व—“मां गृहीत्वा तपोवना-  
भिमुखं शनैःशनैरगच्छत् -” तक 15 अंक
5. प्राचीन शिलालेखों में निम्नलिखित शिलालेख 4 अंक
  1. रुद्रदामन् का शिलालेख ।
  2. मेहरोली लीह-स्तम्भ लेख ।
  2. कुमारगुप्त का दशपुर शिलालेख

**सहायक पुस्तक—**

अभिलेखमाला—भा वन्वु, चौखम्भा, वाराणसी ।

6. साहित्यदर्पण—विश्वनाथ—दशम परिच्छेद (अलंकार) 20 अंक  
अलंकार-लक्षण सहित निम्नाङ्कित 35 अलंकार (शास्त्रीय विवेचन  
रहित) निर्धारित हैं :—

शब्दालंकार :

- (1) अनुप्रास (2) यमक (3) इलेप (4) वक्रोक्ति

अर्थालंकार :

- (5) उपमा (6) अनन्वय (7) उपमेयोपमा (8) रूपक (9) संदेह  
(10) भ्रान्तिमात्र (11) अपह्नुति (12) उत्प्रेक्षा (13) अतिशयोक्ति  
(14) तुल्ययोगिता (15) दीपक (16) प्रतिवस्तुपमा (17) दृष्टान्त  
(18) निदर्शना (19) व्यतिरेक (20) सहांक्ति (21) समासोक्ति  
(22) अप्रस्तुतप्रशंसा (23) व्याजस्तुति (24) पर्यायोक्ति  
(25) अर्थान्तरन्यास (26) काव्यलिंग (27) विभावना  
(28) विशेषोक्ति (29) असंगति (30) विषम (31) कारणनाला  
(32) एकावली (33) परिसंख्या (34) व्याजोक्ति  
(35) स्वभावोक्ति ।

7. सम्बद्ध व्याकरण 12 अंक

8. मुद्राराक्षस—नाटक से प्राकृत अवतरण का संस्कृत में रूपान्तर  
(दो अवतरण प्रस्तुत कर किसी एक अवतरण का संस्कृत में  
रूपान्तर पृष्टा जाना चाहिए) 4 अंक

टिप्पणी :—संस्तुत पुस्तकों से पाठ्यक्रम से सम्बद्ध अंश ही पठनीय हैं।

सहायक पुस्तक :—

( i ) संस्कृत के सन्देश काव्य - डा० रामकुमार आचार्य

तृतीय पत्र :—भारतीय दर्शन

समय 3 घण्टे

पूर्णांक 100

1. ईश्वर कृष्ण—सांख्य-कारिका 20 अंक
2. केशव मिश्र—तर्क-भाषा (प्रामाण्यवाद के अन्त तक) 30 अंक
3. सदानन्द - वेदान्तसार 24 अंक
4. माधवाचार्य—सर्वदर्शन-संग्रह : (चार्वाक दर्शन मात्र) 6 अंक
5. चैतन्यदास—जैन-दर्शनसार (प्रथम अध्याय पूर्ण एवं तृतीय अध्याय के सप्तभंगी, स्याद्वाद तथा अहिंसा प्रकरण) 20 अंक

प्रकाशक—वीर प्रेस, जयपुर ।

सहायक पुस्तकें :

1. बलदेव उपाध्याय—भारतीय दर्शन
2. दत्ता एवं चटर्जी—इन्स्ट्रक्शन टू इण्डियन फिलोसोफी (हिन्दी व अंग्रेजी संस्करण)
3. ब्रह्ममित्र अवस्थी—भारतीय न्यायशास्त्र. (इन्स्ट्रु प्रकाशन, दिल्ली-6 से प्रकाशित)
4. डा. उमेश मिश्र—भारतीय दर्शन (हिन्दी समिति, उत्तर प्रदेश सरकार लखनऊ द्वारा प्रकाशित)
5. सन्तराम श्रीवास्तव—वेदान्तसार ।
6. सांख्यकारिका—(वृत्तिदीपिका सहित)—सं. रमाशंकर त्रिपाठी

चतुर्थ पत्र :—प्राचीन भारत का साहित्यिक एवं सांस्कृतिक इतिहास, व्याकरण एवं अनुवाद

(अ) प्राचीन भारत का साहित्यिक एवं सांस्कृतिक इतिहास—निम्नांकित विषयों पर विशेष अध्ययन अपेक्षित है—

1. वैदिक साहित्य - संहितायें, ब्राह्मण, आरण्यक, उपनिषद्, एवं सूत्र-ग्रन्थ 20 अंक
2. पौराणिक, आधुनिक तथा शास्त्रीय साहित्य 20 अंक

- (क) पौराणिक साहित्य  
 (ख) आधुनिक साहित्य (इस विषय पर एक वैकल्पिक प्रश्न पूछना चाहिए, उसे अनिवार्य नहीं किया जाना चाहिए।)  
 (ग) शास्त्रीय साहित्य—(i) दार्शनिक साहित्य (ii) धर्मशास्त्र  
 (iii) अर्थशास्त्र (iv) अलंकारशास्त्र  
 (v) आयुर्वेद (vi) वैज्ञानिक साहित्य  
 (vii) ज्योतिष (viii) तंत्र एवं  
 (ix) गणित

3. प्राचीन भारत का सांस्कृतिक इतिहास 20 अंक  
 (i) ऋग्वेद काल से लेकर 400 ई. पू. तक का प्राचीन भारत का सांस्कृतिक इतिहास।  
 (ii) मौर्य काल से लेकर 12 वीं शताब्दी ई. तक के ऐतिहासिक अवशेषों का इतिहास। (Monuments of Ancient India)  
 (iii) भारत के औपनिवेशिक (Colonial) तथा सांस्कृतिक (Cultural) विस्तार का इतिहास।  
 (आ) इतिहास पर टिप्पणी (संस्कृत में) 10 अंक  
 (इ) व्याकरण—1. लघुकौमुदी—प्रक्रिया भाग 15 अंक  
 2. प्रक्रिया भाग पर  
 आधारित प्रयोग 5 अंक  
 (ई) अनुवाद—हिन्दी से संस्कृत में 10 अंक

संस्तुत पुस्तकें :—

1. विन्टरनिट्ज—हिस्ट्री आफ इण्डियन लिटरेचर भाग-1
2. कैम्ब्रिज हिस्ट्री आफ इण्डिया—प्रथम भाग—(अध्याय द्वितीय से दशम तक तथा 26वां अध्याय केवल)
3. आर. के. भुखर्जी—हिन्दू सभ्यता—अध्याय—4, 5, 6 तथा 7 भारतीय विद्या-भवन, बम्बई से प्रकाशित
4. India's—Past Macdonell.

सहायक पुस्तकें :

1. बलदेव उपाध्याय—वैदिक साहित्य और संस्कृति शारदा मन्दिर, गणेश दीक्षित, काशी।

2. डा. रामजी उपाध्याय—संस्कृत साहित्य का आलोचनात्मक इतिहास : प्रकाशक—रामनारायण लाल बेनी मावव, इलाहाबाद ।
3. मैक्डोनाल्ड—हिस्ट्री आफ संस्कृत लिटरेचर ।
4. गोविन्द कृष्ण पिल्लई—वैदिक हिस्ट्री, किताबिस्तान, इलाहाबाद ।
5. डा. खण्डेलवाल—मुसलगांवकर—संस्कृत साहित्य की प्रवृत्तियाँ, विनोद पुस्तक मन्दिर, आगरा ।
6. डा. बाबूराम त्रिपाठी—संस्कृत साहित्य का आलोचनात्मक इतिहास : विनोद पुस्तक मन्दिर, आगरा ।
7. डा. रामजी उपाध्याय—भारतस्य सांस्कृतिक-निधि : प्रकाशक—संस्कृत-परिषद्, सागर विश्वविद्यालय, सागर ।
8. राजकिशोर सिंह व यादव—भारतीय कला एवं संस्कृति, विनोद पुस्तक मन्दिर, आगरा ।
9. डा. रामजी उपाध्याय—भारत की सांस्कृतिक साधना ।
10. डा. सूर्यकान्त—संस्कृत वाङ्मय का आलोचनात्मक इतिहास, लॉगमैन प्रकाशन, बम्बई ।
11. श्री भगवद्दत्त—वैदिक वाङ्मय का इतिहास ।

( एम. ए. उत्तरार्द्ध परीक्षा )

वर्ग—'अ' (A) संस्कृत साहित्य

प्रथम पत्र :—काव्य शास्त्र (Sanskrit Poetics) :

समय 3 घण्टे

पूर्णांक—100

( i ) संस्कृत काव्य शास्त्र :

1. मम्मट—काव्य प्रकाश—प्रथम से अष्टम उल्लास तक (सप्तम उल्लास में से केवल रसदोष ही पठनीय है) 50 अंक

2. आनन्दवर्धन—ध्वन्यालोक—प्रथम उद्योत । 20 अंक

टिप्पणी :—विद्यार्थी से ध्वन्यालोक पर अभिनवगुप्त की लोचन टीका के अध्ययन की अपेक्षा की जाती है ।

3. कुल्लुक—वक्रोक्ति-जीवितम्—प्रथम उन्मेष (कारिका भाग मात्र) 20 अंक

(ii) अलंकार-शास्त्र का इतिहास 10 अंक

सहायक पुस्तकें :

1. श्री पी. वी. काणे—हिस्ट्री आफ अलंकार लिटरेचर ।
2. एस के. डे—संस्कृत पोइटिक्स ।
3. बलदेव उपाध्याय—भारतीय साहित्यशास्त्र ।

द्वितीय पत्र :—नाटक एवं नाट्यशास्त्र

समय 3 घण्टे

पूर्णाङ्क 100

(i) नाटक

1. भवभूति—उत्तररामचरितम् 25 अंक
2. कृष्णमिश्र—प्रबोध-चन्द्रोदयम् 20 अंक
3. भट्टनारायण—वेणीसंहार-नाटकम् 20 अंक

(ii) नाट्यशास्त्र

1. भरत—नाट्यशास्त्रम्—1-2 अध्याय मात्र, 10 अंक  
सम्पादक—डा. भोलानाथ शर्मा, साहित्य-निकेतन, कानपुर ।
2. वनञ्जय—दशरूपकम् 25 अंक

सहायक पुस्तकें :

1. अभिनव गुप्त—अभिनवभारती ।
2. कीथ—संस्कृत ड्रामा (नाटक) ।
3. सी वी. गुप्त—इण्डियन थियेटर ।
4. मनकद—टाइप्स आफ संस्कृत ड्रामा ।
5. मनमोहन घोष—भरत नाट्यशास्त्र (अंग्रेजी अनुवाद)
6. डा. रामजी उपाध्याय—दशरूपक (नांदी टीका)  
संस्कृत परिपद, सागर विश्वविद्यालय से प्रकाशित ।
7. डा. रामजी उपाध्याय—दशरूपक तत्त्व-विमर्श ।  
संस्कृत परिपद, सागर विश्वविद्यालय से प्रकाशित ।
8. डॉ. रामजी उपाध्याय—मध्यकालीन संस्कृत नाटक ।

तृतीय पत्र : काव्य (गद्य, पद्य तथा चम्पू) :

समय 3 घण्टे

पूर्णाङ्क 100

पाठ्य पुस्तकें :

1. विक्रमांकदेवचरितम्—(प्रथम सर्ग)—विल्हण 10 अंक

2. नैषधचरितम् (तृतीय सर्ग)—श्री हर्ष 15 अंक
3. सौन्दर्यलहरी—शंकराचार्य 20 अंक
4. हर्षचरित—(दो उच्छ्वास) 25 अंक
5. शिवराजविजय—(प्रथम दो निश्वास)—पं. अम्बिकादत्त शास्त्री 15 अंक
6. भारतचम्पू—प्रथम स्तवक 15 अंक

अथवा

## आधुनिक संस्कृत साहित्य

## पाठ्यक्रम :

1. विवेकानन्दविजयम्—डा. श्रीधर भास्कर वर्णेकर 20 अंक
2. कामायनी—श्रद्धा सर्ग  
अनुवादक : पं. भगवानदत्त शास्त्री 'राकेश' 15 अंक
3. कुमुदिनीचन्द्र :—मेघाव्रताचार्य 25 अंक

अथवा

यात्राविलासम्—नवलकिशोर, कांकर

4. गांधीगौरवम्—शिवगोविन्द त्रिपाठी  
(5-8 सर्ग) 15 अंक
5. अभिनवकथा-निकुंजम्—शिवदत्त चतुर्वेदी  
(1 से 10 कथाएँ) 25 अंक

अथवा

निम्नलिखित कवियों अथवा लेखकों में से किसी एक का विशेष

अध्ययन - 100 अंक

( i ) भास ( ii ) कालिदास (iii) वाणभट्ट (iv) भवभूति (v) माघ  
एवं (vi) अश्वघोष ।

अथवा

लघुशोध-प्रबन्ध—(Dissertation) (स्वयंपाठी छात्रों के लिए नहीं)

100 अंक

## वर्ग 'ब' (B) वैदिक साहित्य

## प्रथम पत्र :—संहिता पाठ (Sambhita Text)

1. ऋग्वेद—सप्तम मण्डल—सूक्त 1 से 10 तक । 35 अंक
2. अथर्ववेद—अथर्वोक्त सूक्त मात्र निर्धारित हैं— 30 अंक

काण्ड

सूक्त

1 — 5,6,14

2 — 28,33



3	—	12, 6, 17, 30
4	—	30
8	—	9
9	—	9 [14-अस्य वामस्य]
11	—	6 [प्राण] 7 [ब्रह्मचारी]
19	—	52, 53

3. वाजसनेयी संहिता—अध्याय 1, 32 एवं 36 । 20 अंक

टिप्पणी :—परीक्षार्थियों से आशा की जाती है कि वे वेद के मन्त्रों के विभिन्न भाष्य, जिनमें सायण, कपाली शास्त्री, दयानन्द तथा उव्वट का नाम विशेषतः उल्लेखनीय है, पढ़ेंगे तथा आधुनिक भाष्यार्थों से भी परिचित रहेंगे।

4. सायण-ऋग्वेदादि भाष्य-भूमिका से ऋग्भाष्य-भूमिका 15 अंक

सहायक ग्रंथ :

1. श्री रामगोविन्द त्रिवेदी—वैदिक साहित्य (भारतीय ज्ञान-पीठ, दुर्गा कुण्ड, काशी) ।
2. मैक्डोनाल्ड—ए वैदिक ग्रामर फार स्टुडेन्ट्स (हिन्दी अनुवाद) डा. सत्यव्रत ।
3. युधिष्ठिर भीमांसक—वैदिक स्वर-भीमांसा ।
4. दयानन्द—ऋग्वेदादि भाष्य-भूमिका ।
5. गोविन्दलाल वंशीलाल व खट्वा शास्त्री—वैदिक व्याकरण भास्कर, 32-सी चैम्बर्स, दिनशावाछा रोड, बम्बई ।
6. डा. मंगलदेव शास्त्री—भारतीय संस्कृति का विकास—(वैदिक धारा) भारतीय ज्ञानपीठ प्रकाशन, 620/21, नेताजी सुभाष मार्ग, दिल्ली-6 ।
7. टी. कपाली शास्त्री : ऋग्भाष्यभूमिका ।

टिप्पणी :—संस्कृत पुस्तकों से पाठ्यक्रम से सम्बद्ध अंश ही पढ़ने अपेक्षित हैं ।

द्वितीय पत्र—ब्राह्मण, उपनिषद् तथा वैदिक सहायक ग्रन्थ

समय 3 घण्टे

पूर्णांक 100

1. ऐतरेय ब्राह्मण-पंचिका 1, अध्याय 1 व 2 मात्र 20 अंक
2. शतपथब्राह्मण—(माध्यन्दिन काण्ड 1, अध्याय 1) 15 अंक

- |   |          |
|---|----------|
| 3. यास्क—निरुक्त 2, 7 से 10 अध्याय  | 35 अंक   |
| 4. ऋक् प्रातिशाख्य—1, 2 और 3 पटल मात्र<br>(सभी पटलों के परिगणन सूत्रों पर विहङ्गम—दृष्टि ही अपेक्षित है।) | 15 अंक   |
| 5. छान्दोग्योपनिषद्—अध्याय 7  | } 15 अंक |
| 6. कात्यायन श्रौतसूत्र—अध्याय 1/1-2   |          |

### सहायक पुस्तकें :

1. एस वर्मा—एटिमोलोजी आफ यास्क (अध्याय 1 व 2)
2. युधिष्ठिर मीमांसक—वैदिक छन्दो-मीमांसा
3. कीय-रिलीजन एण्ड फिलोसोफी आफ दी वेद एण्ड उपनिषद्स (अध्याय 26 से 28 तक)
4. ऋग्वेद प्रातिशाख्य—डा० वीरेन्द्रकुमार वर्मा, प्रोफेसर व अध्यक्ष (बनारस हिन्दू यूनिवर्सिटी)
5. निरुक्त-मीमांसा—शिवनारायण शास्त्री  
(इण्डोलोजिकल बुक हाऊस, सी-के 31/10 नेपाली खपड़ा,  
पो० बा० 98, वाराणसी)
6. Dr. Fatah Singh—Vedic Etymology

तृतीय पत्र :—वैदिक धर्म का तुलनात्मक विवेचन एवं देवशास्त्र

(Comparative Study of Vedic Religion and Mythology) :—

समय 3 घण्टे

पूर्णांक 100

### पाठ्य पुस्तकें :

- |                                       |        |
|---------------------------------------|--------|
| 1. मॅक्डोनेल—वैदिक माइथोलोजी          | 50 अंक |
| 2. गंगा प्रसाद—फाउन्टेन हैड आफ रिलीजन | 30 अंक |
| 3. बृहद्देवता—प्रथम व द्वितीय अध्याय  | 20 अंक |

### सहायक पुस्तकें :

1. देशमुख—ओरिजिन एण्ड डवलपमेंट आफ रिलीजन इन वैदिक लिटरेचर
2. कीय-रिलीजन एण्ड फिलोसोफी आफ वेद एण्ड उपनिषद्स (1 से 15 अध्याय)
3. दयानन्द—सत्यार्थ-प्रकाश (11 से 14 अध्याय)

4. मैक्समुलर—पुराण शास्त्र एवं जनकयार्ये  
(इतिहास प्रकाशन संस्थान, वाराणसी-1)  
प्रतिष्ठापन—(आदर्श हिन्दी पुस्तकालय, 49 अहिमापुर,  
इलाहाबाद)

अथवा

निम्नलिखित कृषियों के नंबलों में से किसी एक का विशेष अध्ययन :

100 अंक

1. विश्वामित्र

2. वानदेव

अथवा

लघु शोधप्रबन्ध (Dissertation) (स्वयंपाठी छात्रों के लिए नहीं)

100 अंक

वर्ग 'स' (C) दर्शन शास्त्र

समय : 3 घण्टे

पूर्णांक—100

प्रथम पत्र :—न्याय और वैशेषिक :

- |  |        |
|--|--------|
| 1. वात्स्यायन—न्यायसूत्र (सभाष्य) प्रथम अध्याय                   | 30 अंक |
| 2. विश्वनाथ—न्यायसिद्धान्तमुक्तावली<br>(प्रत्यक्ष तथा शब्द खण्ड) | 40 अंक |
| 3. प्रशस्तपाद-भाष्य  | 30 अंक |

सहायक पुस्तकें :

1. तर्क संग्रह—सम्पादक बोडास

द्वितीय पत्र : सांख्य और आगम एवं व्याकरण-दर्शन

- |  |        |
|--|--------|
| 1. वाचस्पति मिश्र—सांख्य-तत्त्व-कौमुदी | 30 अंक |
| 2. अभिनवगुप्त—परमार्थसार               | 20 अंक |
| 3. परम-तन्त्र-संज्ञा                   | 50 अंक |

तृतीय पत्र—वेदान्त और मीमांसा

- |                               |        |
|-------------------------------|--------|
| 1. शंकराचार्य—चतुस्तुती       | 35 अंक |
| 2. गौडपाद—माण्डूक्यकारिका     | 35 अंक |
| 3. लौगाक्षिभास्कर—अर्थ-संग्रह | 30 अंक |

सहायक पुस्तकें :

1. डा. मण्डन मिश्र शास्त्री—मीमांसा दर्शन ।  
(रमेश बुक डिपो, जयपुर) ।

2. एच. बी. दाते—वेदान्त एकस्प्लेण्ड वाल्यूम-1  
(टुकसेलर्स पब्लिशिंग कं., महेण्डल विल्डिंग, बी. पी. रोड,  
बम्बई)

अथवा

लघु शोध-प्रबन्ध (Dissertation) — (स्वयंपाठी छात्रों के लिए नहीं)

100 अंक

वर्ग-द (D)

धर्मशास्त्र

प्रथम पत्र सूत्र और मीमांसा

समय : 3 घण्टे

पूर्णांक—100

पाठ्य ग्रन्थ :

1. गौतम-धर्मसूत्राणि—संपूर्ण 70 अंक
2. अर्थ-संग्रह—लौगाक्षि भास्कर 30 अंक

द्वितीय पत्र—स्मृति

समय : 3 घण्टे

पूर्णांक—100

1. मनुस्मृति (तृतीय व चतुर्थ अध्याय) 20 अंक
2. याज्ञवल्क्यस्मृति—(आचाराध्याय) मूल 15 अंक
3. याज्ञवल्क्यस्मृति—(व्यवहाराध्याय) दायभाग—रहित (1 से 7 प्रकरण मितक्षरा सहित व शेष का सामान्य अध्ययन) 35 अंक
4. याज्ञवल्क्यस्मृति—(प्रायश्चित्ताध्याय) मूल 15 अंक

निम्न विषयों का सामान्य विवेचन पठनीय—(1) प्रायश्चित्त का सामान्य विवेचन (2) महापातकी (3) उपपातक (4) संकरीकरण (5) अपात्रीकरण (6) मलिनीकरण (7) आत्रेयी लक्षण (8) ग्यारह मद्य (9) सुवर्ण का अर्थ (10) अनुपातक (11) सर्व व्रतों के साधारण धर्म (12) रहस्य प्रायश्चित्त (13) अन्य प्रायश्चित्त (14) सुरापान (15) सुवर्ण-चौर्य व गुरुतत्पगामी के प्रायश्चित्त (16) अज्ञानकृत प्रायश्चित्त (17) यम-नियम (18) सातपन (19) महासान्तपन (20) पराङ्गच्छ, (21) तप्तकृच्छ्र, (22) पादकृच्छ्र, (23) अतिकृच्छ्र, (24) कृच्छ्रप्रतिकृच्छ्र, (25) सौम्यकृच्छ्र, (26) तुलापुरुष-कृच्छ्र, (27) चान्द्रायण-व्रत (28) याज्ञवल्क्य-धर्मशास्त्र के अध्ययन का फल।

5. पराशरस्मृति—(संपूर्ण) मूल

15 अंक

तृतीय पत्र—धर्मशास्त्र का इतिहास व निबन्ध-ग्रन्थ

समय : 3 घण्टे

पूर्णांक—100

1. धर्मशास्त्र का इतिहास—श्री पी. बी. कारो

निर्धारित पाठ्यग्रन्थों का इतिहास—प्रथम खण्ड पर आधारित  
20 अंक

2. धर्मसिन्धु—श्री कशीनाथ उपाध्याय  
(प्रथम व द्वितीय परिच्छेद) 50 अंक
3. याज्ञवल्क्यस्मृति—(व्यवहाराध्याय) दायभाग-प्रकरण 20 अंक
4. रत्नक-चन्द्रिका—श्री कुबेरकृता  
अथवा 10 अंक

लघु शोध-प्रबन्ध । (स्वयंपाठी छात्रों के लिए नहीं ।)

विशिष्ट वर्ग—ई (E)

पालि तथा प्राकृत (Pali & Prakrit)

प्रथम पत्र—पालि तथा अर्द्ध-मागधी

समय 3 घण्टे पूर्णांक 100

पाठ्य पुस्तकें :

1. पालि-जातकावलि—श्री बटुक नाथ शर्मा  
(केवल 1-15 जातक) 50 अंक
2. मिलिण्डपञ्चो (मिलिन्दपन्हो) सं. श्री आर. डी.  
वाडेकर, द्वितीय अध्याय—लक्षणपन्हो मात्र 10 अंक
3. धम्मपद—तृतीय से पष्ठ वग तक (केवल 4 वग) 10 अंक
4. उवासगदसाओ—संपादक—डा. पी. एल वैद्य 10 अंक
5. नूयगडो अंग—(प्रथम अध्याय) 10 अंक
6. उत्तराञ्जयनम् (उत्तराध्ययनमूत्रम्) प्रथम, चतुर्थ  
तथा 11 वां अध्याय मात्र 10 अंक

संस्तुत पुस्तकें :

- (i) धम्मपद -- (समालोचनात्मक अध्ययन) ..  
डा. नाथूलाल पाटक, कोटा
- (ii) Significance and Importance of Jatakas :  
by G.D. Fiey

द्वितीय पत्र—महाराष्ट्री तथा शौरसेनी

समय 3 घण्टे पूर्णांक 100

पाठ्य पुस्तकें :

- (1) गण्डवहो (प्रथम 2 सर्ग) 1 से 98 गाथा तक 25 अंक
- (2) कप्पूरमंजरी—राजनेखर 25 अंक

- (3) समयसार—(1 से 202 गाथा तक) 25 अंक  
 (4) पालि रीडर—डी. एन्डरसन, लन्दन (32 से 40वें पाठ तक) 25 अंक

तृतीय पत्र—पालि तथा प्राकृत का इतिहास तथा व्याकरण

समय 3 घण्टे

पूर्णांक 100

संस्तुत पुस्तकें :

- (i) पालि साहित्य का इतिहास—डॉ. भरतसिंह
- (ii) A History of Pali Literature by B.C. Law.
- (iii) Manual of Pali : by C.B. Joshi.
- (iv) पालि-प्रबोध—श्री आद्यादत्त ठाकुर
- (v) पालि भोगलान व्याकरण—भदन्त आनन्द कौसल्यायन
- (vi) Prakrit Languages and their contribution to Indian Culture by S.M. Katre.
- (vii) Winternitz—History of Indian Literature—Vol. II.
- (viii) प्राकृत-प्रकाश—वररुचि
- (ix) Introduction to Prakrit—A.C. Woolner.

अंक विभाजन :

- |                               |           |
|-------------------------------|-----------|
| (1) पालि का इतिहास—25 अंक     | } 100 अंक |
| (2) पालि का व्याकरण—25 अंक    |           |
| (3) प्राकृत का इतिहास—25 अंक  |           |
| (4) प्राकृत का व्याकरण—25 अंक |           |

चतुर्थ पत्र—व्याकरण, अनुवाद एवं निबन्ध (सभी वर्गों के लिये अनिवार्य)

समय : 3 घण्टे

पूर्णांक—100

1. व्याकरण :

1. सिद्धान्त-कौमुदी—कारक प्रकरण 15 अंक
2. लघुसिद्धान्त-कौमुदी—उत्तरकृदन्त प्रकरण 7 अंक
3. लघुसिद्धान्त-कौमुदी—तद्धित तथा स्त्री प्रत्यय प्रकरण 15 अंक
4. लघुसिद्धान्त-कौमुदी—समास प्रकरण 8 अंक
5. पठित व्याकरण पर आधारित व्युत्पत्ति-प्रदर्शन एवं  
अर्थाद-संशोधन । 10 अंक
6. अनुवाद : 20 अंक

दो अवतरणों को प्रस्तुत कर उनमें से एक का संस्कृत में अनुवाद कराया जाना अपेक्षित है। इनमें से एक अवतरण हिन्दी में प्रस्तुत किया जाना अनिवार्य है।

7. निबन्ध : 20 अंक  
8. अपठित—संस्कृत गद्य या पद्य का अनुवाद या व्याख्या 5 अंक

‘अ’ व ‘द’ ‘स’ तथा ई’ वर्गों से सम्बद्ध विषयों पर न्यूनातिन्यून एक निबन्ध का शीर्षक पूछना अनिवार्य है। परीक्षार्थी उन विषय-गत शीर्षकों में से किसी एक पर निबन्ध रचना प्रस्तुत करेंगे।

सहायक पुस्तकें —

1. डा. मंगलदेव शास्त्री—प्रबन्ध-प्रकाश  
(इंडियन प्रेस, इलाहाबाद)
2. हृषीकेश भट्टाचार्य—‘प्रबन्ध-मंजरी’
3. पं गिरिवर शर्मा चतुर्वेदी—निबन्ध-मंजरी  
शारदा मंदिर, नई सड़क, दिल्ली
4. वी.एस. आष्टे—गाइड टू संस्कृत कम्पोजीशन
5. हंसराज अग्रवाल—प्रबन्ध-प्रदीप
6. डा० कपिलदेव द्विवेदी—प्रीड़-रचनानुवाद-कौमुदी
7. चारुदेव : शब्दापशब्दविवेक  
[पठित व्याकरण पर आधारित व्युत्पत्ति के लिए सहायक ग्रंथ]
8. डा० बाबूराम त्रिपाठी—संस्कृत-व्याकरण  
(विनोद पुस्तक मन्दिर, आगरा)
9. डा० नारायण शास्त्री कांकर—व्याकरण-साहित्यप्रकाश  
(अजमेरा बुक कम्पनी, त्रिपोलिया, जयपुर)
10. संस्कृत निबन्ध-नवनीतम् - डा० द्विवेदी एवं चतुर्वेदी  
(श्रीराम मेहरा एण्ड कम्पनी, आगरा)
11. कारक-दीपिका—श्री मोहनवल्लभ पन्त  
(रामनारायणलाल बेनीभाव, प्रयाग)
12. अपठित—आधुनिक साहित्य एवं पत्र पत्रिकाएँ—

निम्नलिखित शोध-पत्रिकाएँ भी पठनार्थ अनुमोदित हैं :

1. सागरिका—संस्कृत विभाग, सागर विश्वविद्यालय, सागर
2. संस्कृत-प्रतिभा—साहित्य अकादमी, नई दिल्ली
3. सारस्वती सुपना—वाराणसेय संस्कृत विश्वविद्यालय,  
वाराणसी-2
4. भारती (मासिक)—भारती कार्यालय, न्यू कालोनी, जाजू  
अस्पताल के सामने, जयपुर।

5. मागधम्—एच. डी. जैन कालेज, मगध विश्वविद्यालय, आरा (विहार)
6. स्वर-मंगला—राजस्थान साहित्य अकादमी, उदयपुर ।

पंचम पत्र : मौखिक परीक्षा

100 अंक

अथवा

मौखिक परीक्षा के स्थान पर लिखित पत्र

(स्वयंपाठी एवं पत्राचार पाठ्यक्रम के छात्रों के लिए)

समय : 2 घण्टे

पूर्णांक 100

पाठ्यक्रम :

1. प्रबन्ध-मकरन्द—ले० श्री नवलकिशोर काँकर  
(प्रकाशक : विद्यावैभव-भवन, सुमेरुकाँ मार्ग, रामगंज, जयपुर)  
20 अंक
2. संस्कृत गद्य-सौरभम्—  
सं. श्री मदनमोहन शर्मा एवं डॉ. सुभाष वेदालंकार  
(प्रकाशक : अलंकार प्रकाशन, जयपुर) 20 अंक
3. बुद्धचरितम्—अश्वघोष (1-2 सर्ग) 20 अंक
4. उपर्युक्त पुस्तकों पर आधारित प्रश्न (संस्कृत में) 20 अंक
5. उपर्युक्त पुस्तकों पर आधारित प्रश्न (हिन्दी में) 20 अंक

एम०फिल्० परीक्षा

संस्कृत

एम. फिल की उपाधि के लिए कुल पांच प्रश्नपत्र होंगे। प्रथम दो प्रश्नपत्र ऐच्छिक वर्गों में से किसी एक में से पूछे जायेंगे। प्रश्न पत्र 3, 4, एवं 5 सबके लिए सामान्य होंगे।

परीक्षाधियों को 50% प्रश्नों के उत्तर संस्कृत भाषा में लिखने होंगे।

ऐच्छिक वर्ग

वर्ग 'अ' साहित्य

प्रथम प्रश्नपत्र : काव्यशास्त्र

निम्नलिखित ग्रन्थों से व्याख्या एवं आलोचनात्मक प्रश्न पूछे जायेंगे—

1. पं. जगन्नाथ—रसगंगाधर (प्रथम आनन) 25 अंक
2. भोजराज—शृंगार प्रकाश-एकादश अध्याय (रस सम्बन्धी अंश) 25 अंक



3. भारतीय काव्यशास्त्र के सम्प्रदायों का क्रमिक विकास एवं पश्चिमी काव्य-सिद्धान्तों से तुलना तथा आलोचनात्मक अध्ययन।  
50 अंक

संस्तुत पुस्तकें :

1. S.K. De—Sanskrit Poetics
2. Kane P. V.—History of Alankara Literature
3. बलदेव उपाध्याय—भारतीय साहित्य शास्त्र
4. कन्हैयालाल पोद्दार—संस्कृत साहित्य का इतिहास
5. अरस्तू—काव्यशास्त्र; डा० नगेन्द्र का अनुवाद
6. I. A. Richards—Principles of Literary Criticism
7. सावित्री सिन्हा : पाश्चात्य काव्यशास्त्र का इतिहास

द्वितीय प्रश्नपत्र : नाट्यशास्त्र तथा ध्याकरण

(क) नाट्यशास्त्र :

1. भरत-नाट्यशास्त्र—6-7 अध्याय 20 अंक  
(नोट :—विद्यार्थी से अभिनवभारती के अध्ययन की अपेक्षा की जाती है।)
2. हेमचंद्र—काव्यानुशासन (भाव-प्रकरण) 15 अंक
3. रामचन्द्र गुणचन्द्र—नाट्यदर्पण (तृतीय विवेक) 15 अंक

(ख) ध्याकरण :

लघु सिद्धान्तकौमुदी—गण-प्रकरण 50 अंक

संस्तुत पुस्तकें :

प्रथम प्रश्न-पत्र में संस्तुत सभी पुस्तकें

तथा

1. अभिनवभारती—आचार्य विश्वेश्वर
2. हिन्दी नाट्यदर्पण—आचार्य विश्वेश्वर
3. लघु सिद्धान्त कौमुदी—महेशसिंह कुशवाहा

वर्ग 'ब' वेद

प्रथम प्रश्नपत्र : संहिता एवं वेदांग

(क) वेदशास्त्र-संग्रह—विश्वबन्धु

(साहित्य अकादमी—नई दिल्ली)

30 अंक

ऋग्वेद—ऋग्वेदे जीवन-व्यापारः ऋग्वेदे आरण्यकानि,

ऋग्वेदे रहस्यवादाः

अथर्ववेद—7/5, 10/8, 11/7, 12/1

यजुर्वेद—34 प्रकीर्ण मन्त्राः

टिप्पणी—निर्वास्ति मन्त्रों पर साधारण, अरविन्द एवं आधुनिक विद्वानों के भाष्यों का ज्ञान अपेक्षित होगा ।

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| (ख) निरुक्त—अध्याय 4, 11 और 12   | 30 अंक |
| (ग) वैदिक-व्याकरण—सिद्धान्त-कौमुदी<br>स्वर वैदिकी प्रक्रिया-पारिणीय शिक्षा | 10 अंक |
| (घ) मैकडॉनल—वैदिक-व्याकरण  | 30 अंक |

द्वितीय प्रश्न पत्र : श्रौतयज्ञ, देवता, ऋषि छन्द तथा व्याकरण

- |                                    |        |
|------------------------------------|--------|
| (क) श्रौत सूत्रों का सामान्य परिचय | 20 अंक |
| संस्तुत पुस्तक :                   |        |

1. पी वी. कारे—धर्मशास्त्र का इतिहास

- |                               |        |
|-------------------------------|--------|
| (ख) देवता, ऋषि एवं छन्द-परिचय | 20 अंक |
|-------------------------------|--------|

1. मधुसूदन ओझा—महर्षिकुल-वैभवम्—ऋषिनिर्हण  
(प्रकाशक राजस्थान प्राच्यविद्या-प्रतिष्ठान, जोधपुर)

2. आविर्देविकाध्याय—देवतानिर्हण

3. स्मार्तकुण्ड—सनीषाध्याय—यज्ञायुष्य प्रकरण ।

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|----------------------|--------|
| (2) वैदिक छन्द परिचय | 10 अंक |
|----------------------|--------|

संस्तुत पुस्तक—

वैदिक छन्दोमीमांसा—युधिष्ठिर मीमांसक

(रामलाल कपूर ट्रस्ट, सोनीपत)

- |             |        |
|-------------|--------|
| (ग) व्याकरण | 50 अंक |
|-------------|--------|

लघु सिद्धान्तकौमुदी—गण-भाग

वर्ग 'स' दर्शन

प्रथम प्रश्न पत्र : शास्त्रीय ग्रंथ

- |   |        |
|---|--------|
| 1. पदार्थतत्त्वनिर्हण—रघुनाथ शिरोमणि        | 20 अंक |
| 2. सौगतसिद्धान्तसार-संग्रह—चन्द्रवर चन्द्रा | 20 अंक |
| 3. शास्त्रदीपिका—तर्कपाद                    | 20 अंक |

4. ब्रह्मसूत्र शांकरभाष्य-2-2 (तर्कपाद) 20 अंक
5. दर्शनशास्त्र का इतिहास 20 अंक

टिप्पणी :—मूल ग्रन्थों पर व्याख्या एवं आलोचनात्मक प्रश्न भी पूछे जायेंगे ।

संस्तुत पुस्तकें :—

1. भारतीय दर्शन—वलदेव उपाध्याय
2. भारतीय दर्शन—उमेश मिश्र
3. S.N. Das Gupta—History of Indian Philosophy
4. S. Radha Krishnan—Indian Philosophy Vol. I & II

द्वितीय प्रश्न पत्र : पाश्चात्य-दर्शन एवं व्याकरण-दर्शन

(क) पाश्चात्य दार्शनिकों में से किन्हीं दो का अध्ययन—

प्लेटो, काण्ट, हीगल, नीत्शे 25 अंक  
अथवा

कला एवं साहित्य :

अनुभूति और सौंदर्यात्मक अनुभूति, संवेग, कल्पना और अनुभूति, सर्जनात्मकता, कलाकार और कला-रसिक, अर्थ और सत्य, सौंदर्य-तत्त्व-सिद्धान्त, मूल्यांकन ।

(ख) वाक्यपदीय—(ब्रह्मकांड) 25 अंक

संस्तुत पुस्तकें—

1. Cunningham—History of Western Philosophy
2. W.E. Hokin—Types of Philosophy
3. गुलाबराय—पाश्चात्य दर्शन का इतिहास

(ग) लघु सिद्धान्तकौमुदी (गण-भाग) 50 अंक

वर्ग 'द' धर्मशास्त्र

प्रथम प्रश्न पत्र : स्मृतियाँ एवं निबन्ध

1. प्रायश्चित्त-विवेक—पराशर 20 अंक
2. याज्ञवल्क्यस्मृति—प्रायश्चित्ताध्याय 20 अंक
3. कालमाधव—माधवाचार्य 20 अंक
4. मनुस्मृति—10, 11 और 12 वां अध्याय 20 अंक
5. चातुर्वर्ण्य शिक्षा—पं० दुर्गाप्रसाद द्विवेदी 10 अंक  
(ब्रह्मचारी-शिक्षा से भिक्षु-शिक्षा तक)  
(पृ० 244 से 352 तक)

6. आशीचर्पणिका—मधुसूदन ओझा (प्रथम अध्याय) 10 अंक  
 टिप्पणी :—मूल ग्रन्थों पर व्याख्या एवं समालोच-  
 नात्मक प्रश्न भी पूछे जायेंगे।

संस्तुत पुस्तकें :—

1. शायश्चित्तसार- श्री नृसिंह प्रसाद (प्रकाशक—संस्कृत  
कालेज पुस्तकालय. वाराणसी)
2. Laws of Manu—G. Bilher
3. P.V. Kane—History of Dharmashastra

द्वितीय प्रश्न पत्र : निबन्ध साहित्य तथा व्याकरण

- (क) 1. संस्कार-प्रकाश—वीरमित्रोदय 30 अंक  
 2. समयप्रकाश—वीरमित्रोदय 20 अंक

संस्तुत पुस्तकें :—

1. P.V. Kane—History of Dharmashastra

(ख) व्याकरण—

1. लघु सिद्धान्तकौमुदी—गण-भाग 50 अंक

वर्ग 'इ' व्याकरण एवं भाषा-विज्ञान वर्ग

प्रथम प्रश्न पत्र :

(क) शास्त्रीय ग्रन्थ :

1. वाक्यपदीय — भर्तृहरि-आगमकाण्ड 10 अंक
2. महाभाष्य—2 आह्निक 15 अंक
3. वैयाकरण—भूषणसार 15 अंक
4. Vedic Grammar for Students  
—A.A. Macdonell 15 अंक

संस्तुत पुस्तकें :

1. प्रतिभादर्शन—हरिश्चंकर जोशी
2. पाणिनीयशिक्षायाः शिक्षान्तरैः सह समीक्षा
3. Bhartrihari : A Study of Vakya  
Padiyam in the light of the Ancient  
Commentaries—K.A.S. Aiyer.
4. Indian Theory of Meaning  
—C. Kunhan Raja

5. भाषा-तत्त्व और वाक्यपदीय—सत्यकाम शर्मा

6. संस्कृत व्याकरण-शास्त्र का इतिहास

—दुविष्टिर नीनांसक

(ख) भाषा विज्ञान के मूल सिद्धान्त

45 अंक

ध्वनि-विज्ञान, शब्द-विज्ञान, रूप-विज्ञान, वाक्य-  
विज्ञान तथा अर्थ-विज्ञान।

संस्तुत पुस्तकें :

1. Elements of Science of Language—  
Taraporewala.
2. An Introduction to Comparative  
Philology—P.D. Gune.

द्वितीय प्रश्न पत्र—संस्कृत का भाषा-वैज्ञानिक अध्ययन।

100 अंक

संस्कृत भाषा का उद्गम, संस्कृत-ध्वनियों का वर्गीकरण, संस्कृत ध्वनियों का विकास, संस्कृत विभक्तियों का विकास, उपसर्गों तथा प्रत्ययों का विकास, संस्कृत तथा अवेस्ता, संस्कृत तथा पालि, संस्कृत तथा प्राकृत, संस्कृत तथा आधुनिक भारतीय भाषाएँ।

संस्तुत पुस्तकें :

1. A Linguistic Introduction to Sanskrit—B.K. Ghosh
2. Sanskrit Language—T. Burrow
3. संस्कृत का भाषाशास्त्रीय अध्ययन : भोलाशंकर व्यास।

तृतीय प्रश्न पत्र—शोध-प्रविधि, हस्तलेख-विज्ञान एवं मुद्रा-विज्ञान :

(Research Methodology, Manuscriptology and Numismatics) :

1. शोध एवं उसके प्रकार—साहित्यिक शोध : अवधारणायें, साहित्यिक शोध के तत्त्व व सिद्धान्त, समालोचना और अनु-सन्धान, अन्वेषण और खोज, तात्त्विक भेद, साहित्यिक शोध के प्रकार, भाषावैज्ञानिक अध्ययन, ऐतिहासिक व तुलनात्मक अध्ययन, पाठालोचन, शोध के अविकारी व प्रयोजन।
2. शोध का क्षेत्र, शोध-क्षेत्र का चयन, सम्यक् क्षेत्रीय शोध का पुनर्निर्माण, विषय-निर्वाचन, विषय की सीमायें, संक्षिप्त रूपरेखा, प्राथमिक एवं माध्यमिक स्रोत (Sources)।

3. प्रबन्ध की तैयारी—सामग्री-संकलन, सहायक व सन्दर्भग्रन्थ-सूची का निर्माण, कार्डों (ग्रन्थ-सूचीपत्रों) पर ग्रन्थों से उद्धरण लेना व सारांश ग्रहण करना वर्गीकरण, विश्लेषण तथा संगृहीत सामग्री का उद्योगी विवेचन सन्दर्भलेखन, कार्य की योजना बनाना, रूपरेखा के अनुसार अध्यायों का विभाजन, (शोध-सार), प्रबन्ध लेखन की तैयारी।
4. अनुबन्ध योजना—पूर्वानुबन्ध, प्राक्कथन, विषय-सूची, मूलग्रन्थ संकेत-सूची, पश्चानुबन्ध—परिशिष्ट, सन्दर्भग्रन्थ सूची, नामानु-क्रमणिका, शोध का सारांश व महत्त्व-दिग्दर्शन, प्रथम आलेख, संशोधन, अन्तिम आलेख—संस्कृत हस्तलेखों के पठन एवं अन्तर्राष्ट्रीय लेखन-चिह्नों (Diacritical Marks) से परिचय।
5. हस्तलेखों के पठन की समस्याएँ व मूलपाठ के अध्ययन की तकनीक, संस्कृत के हस्तलिखित ग्रन्थों व सूची-पत्रों का इतिहास।
6. मुद्रा-विज्ञान के मूलभूत सिद्धान्तों का सामान्य परिचय।

#### सन्दर्भ ग्रन्थ :

1. डॉ० उदयभानु सिंह—अनुसन्धान का विवेचन।
2. डॉ० विनय मोहन शर्मा—'शोध-प्रविधि'
3. डॉ० सावित्री सिन्हा व विजयेन्द्र स्नातक—'अनुसन्धान की प्रक्रिया'
4. डॉ० सरनामसिंह शर्मा—'शोध प्रक्रिया और विवरणिका'
5. डॉ० देवराज उपाध्याय—'साहित्य एवं शोध—कुछ समस्याएँ'
6. डॉ० एस. एम. कात्रे—'भारतीय पाठालोचन की भूमिका'  
(हिन्दी अनुवाद)
7. डॉ० मिथिलेश कात्रि—'पाठालोचन-सिद्धान्त और प्रक्रिया'
8. डॉ० वी. एस. सुकथनकर—'महाभारत'—भूमिका
9. डॉ० जी. एच. भट्ट—'रामायण'—भूमिका
10. डॉ० विश्वबन्धु—'वैदिक पदानुक्रम-कोष'—भूमिका
11. डॉ० वी. राघवम्—'न्यू कैटेलोगस् कैटेलोगोरम'—भूमिका
12. डॉ० गौरीशंकर—'संस्कृत शिद्धानुशोचन'
13. डॉ० उदयभानु सिंह—'अनुसन्धान के मूल तत्त्व'

14. Anderson Durston—Thesis & Assignment writing and Poole.
15. डॉ० सत्येन्द्र—पांडुलिपि-विज्ञान
16. गौरीशंकर हीराचन्द्र ओझा—प्राचीन लिपिमाला
17. Rapson : Indian Coins
18. Altekar : Corpus of Indian Coins
19. Macdonell : India's past.

चतुर्थ एवं पंचम प्रश्न-पत्र : लघु-शोध-प्रबन्ध (दो प्रश्न-पत्रों के समकक्ष)

1. लघु-शोध-प्रबन्ध की पृष्ठ-सीमा 150 से 200 तक होगी ।
2. लघु-शोध-प्रबन्ध का विषय :

(क) संस्कृत की पाण्डुलिपियों/मुद्रित पाठ्य-ग्रन्थों के पाठ का सम्पादन, अनुवाद या सटिप्पण व्याख्या तथा हिन्दी, संस्कृत या अंग्रेजी में भूमिका ।

टिप्पणी—केवल ऐसे ही मुद्रित मूल-ग्रन्थ को शोध कार्य के लिए चुना जा सकता है जिसका अब तक ऐसा कोई अनुवाद या सम्पादन नहीं किया गया है ।

अथवा

(ख) सामान्य शोध-विषय । यह शोध-कार्य हिन्दी संस्कृत अथवा अंग्रेजी भाषा के माध्यम से किया जा सकता है ।

राजस्थान विश्वविद्यालय कुलपति सचिवालय में दिनांक 10-11 अक्टूबर 1979 को मध्याह्न 12-00 बजे सम्पन्न हुई दर्शन पाठ्यक्रम समिति की बैठक की कार्यवाही का विवरण :—

### उपस्थित

- 1—डा० एल०आर० जोशी (संयोजक)
- 2—डा० शिव नारायण जोशी
- 3—डा० डी० आर० जाटव
- 4—डा० संगम लाल पाण्डेय
- 5—डा० राजेन्द्र स्वरूप भटनागर (विशेष आमंत्रित)

1. राजस्थान विश्वविद्यालय एक्ट की धारा 24ई (8) के अन्तर्गत डा.एल. आर. जोशी, अध्यक्ष, दर्शन विभाग, हूंगर महाविद्यालय, बीकानेर को सर्वसम्मति से दर्शन पाठ्यक्रम मण्डल का संयोजक शेष कालावधि हेतु नियुक्त किया गया।

2. राजस्थान वि०वि० एक्ट की धारा 34(4)(iv) के अनुसार डा.डी. आर जाटव, राज. महाविद्यालय, श्री गंगानगर को संयोजक के अतिरिक्त परीक्षक चयन समिति का सदस्य चुना गया।

3. समिति ने नये आवेदकों के अभाव में परीक्षा सूची में कोई परिवर्तन नहीं किया।

4. समिति ने गत वर्ष के परीक्षा प्रतिवेदनों और प्रश्न पत्रों के विषय में कोई टिप्पणी नहीं की, क्योंकि वि०वि० कार्यालय ने इनको समिति के समक्ष प्रस्तुत करने में अपनी असमर्थता प्रकट की। कार्यालय से यह अपेक्षा की जाती है कि भविष्य में इनको समय पर उपलब्ध कराया जाय ताकि इन पर विचार हो सके।

5. दर्शन पाठ्यक्रम समिति ने विभिन्न परीक्षाओं के पाठ्यक्रमों में आवश्यक परिवर्तन/परिवर्तन किये, जिसका विवरण निम्नलिखित है :—

I (ए) प्री-यूनिवर्सिटी परीक्षा, 1982—कोई परिवर्तन नहीं।



## II (बी) स्नातक परीक्षायें :—

- 1-प्रथम वर्ष-त्रिवर्षीय पास कोर्स-1982 } कोई  
 2-द्वितीय वर्ष-त्रिवर्षीय पास कोर्स-1982 } परिवर्तन  
 3-तृतीय वर्ष-त्रिवर्षीय पास कोर्स-1982 } नहीं

## III. (सी) आनर्स परीक्षायें :—

- 1-आनर्स पार्ट I—1982 } कोई परिवर्तन नहीं  
 2-आनर्स पार्ट II—1982 }  
 3-आनर्स पार्ट III—1982 परिशिष्ट 'क'

## स्नातकोत्तर-परीक्षायें :—

## (I) एम. ए. प्रथम वर्ष-1982

## प्रथम वर्ष पत्र-भारतीय दर्शन

पाठ्यक्रम विवरणिका (syllabus) 1978 संस्करण ( वार्षिक स्कीम ) पृष्ठ 4, क्रम संख्या 12 पर "भारतीय दार्शनिक समस्याएँ"—लेखक डा० नन्द किशोर शर्मा, राजस्थान हिन्दी ग्रन्थ अकादमी, जयपुर सम्मिलित की जाय ।

(II) द्वितीय पत्र पाश्चात्य दर्शन का इतिहास-पृष्ठ 4 पर ही विचारकों की सूची में से आस्टिन (Austin) को हटाया जाय ।

(III) एम. ए. अन्तिम वर्ष 1983, परिशिष्ट 'ख'

(v) एम. फिल परीक्षा-1982, कोई परिवर्तन नहीं ।

6. मण्डल पहले से ही पाठ्यक्रम विवरणिका (Syllabus) का हिन्दी अनुवाद प्रकाशित कर चुका है ।

7. विद्वत् परिषद ( Academic Council ) के निश्चय 10-11, दिनांक 1-6-79 के सन्दर्भ में समिति ने दर्शन के स्नातक पाठ्यक्रम, 1981 में आवश्यक परिवर्तन का कार्य पूरा कर लिया स्नातकोत्तर पाठ्यक्रम 1981 में आवश्यक परिवर्तन करने हेतु डा. राजेन्द्र स्वरूप भटनागर, अध्यक्ष, दर्शन विभाग, राज. वि. वि., जयपुर को अधिकृत किया गया ।

8. विद्वत् परिषद के निश्चय संख्या 14 दिनांक 11.3.1979 दर्शन पाठ्यक्रम मण्डल से सम्बन्धित नहीं है, क्योंकि दर्शन में मौखिक परीक्षा ( viva voce ) के लिए कोई प्रावधान नहीं है ।

9. समिति ने विद्वत्-परिषद् (Academic Council) के निश्चय संख्या 10 (i) दिनांक 11.3.79 लघुशोध प्रबन्ध (Dissertation) (प्रश्न पत्र के समाप्त करने के विषय में) के सन्दर्भ में विचार किया और इस विषय में अपनी असहमति प्रकट की।

10. विश्वविद्यालय अनुदान आयोग द्वारा आयोजित, दर्शन के आधुनिक पाठ्यक्रमों से सम्बन्ध कार्यशालाओं का प्रतिवेदन समिति के समक्ष विचारार्थ रखा गया। इस सम्बन्ध में यह उल्लेखनीय है कि दर्शन पाठ्यक्रम समिति इस प्रकार के कुछ आधुनिक पाठ्यक्रमों को पहले ही क्रियान्वित कर चुकी है। समयभाव के कारण प्रतिवेदन पर विस्तृत विचार नहीं हो सका।

11. स्नातक स्तर पर जनसंख्या अध्ययन (Population Study) के पाठ्यक्रम को प्रारम्भ करने से सम्बद्ध संकाय के निश्चय संख्या 8 दिनांक 23.3.79 के सन्दर्भ में समिति ने यह निश्चय किया कि यह विषय दर्शन से सम्बद्ध नहीं है। अतः इस विषय में कोई कार्यवाही नहीं की जाय।

अन्त में समिति ने निम्नलिखित प्रस्ताव सर्व-सम्मति से स्वीकृत किया।

“A Special situation has arisen as a consequence of the abolition of the Semester Scheme, whereby the proposed changes in M.A. Phil. II (Semester Paper IV (Ethics) M.A. III Semester Paper B (i) Buddhism), which were decided upon in the meeting of the B.O.S (Philosophy) held on 28/29 Aug., 1978 and passed by the faculty of Arts in its meeting on 23. 3. 79 have not become in-operative in respect of the annual scheme, Since, these changes are of utmost importance, for the annual scheme also, which would now be in force, these may be permitted to remain in force for the M.A. (Previous and Final) examinations of 1981.”

दर्शन पाठ्यक्रम समिति की बैठक की कार्यवाही संयोजक के प्रति बन्धुवाद के साथ समाप्त हुई।

12.11.79

एल. आर. जोशी

संयोजक,

दर्शन पाठ्यक्रम समिति

## परिशिष्ट 'क'

(Ref. Res No. 5 (III) of the minutes)

B.A. (Hons) Part III Examination Philosophy.

वर्ग ख—यहां क्रम सख्या (5) के पश्चात् एक नया वैकल्पिक विषय जोड़ा जाय

वर्ग (ख)(6) वैज्ञानिक सिद्धान्त का विकास—

## पाठनीय विषय—

विज्ञान दर्शन का स्वरूप विज्ञान एवं विज्ञानेतर ज्ञान क्षेत्रों में भेद, विभिन्न विज्ञानों में भेद, वैज्ञानिक प्रवृत्ति का आरम्भ।

वैज्ञानिक चिन्तन एवं पद्धति का विकास—

अनुभव पर बल परिमाण, गणित एवं ज्ञान, वैज्ञानिक यन्त्रों का विकास—कुछ महत्वपूर्ण परीक्षण जिनसे वैज्ञानिक चिन्तन एवं पद्धति के विकास का पता चलता है।

वैज्ञानिक विचार तन्त्र का विकास—अर्थात् किस रूप में किन्हीं वैज्ञानिकों ने पूर्व प्राप्त वैज्ञानिक जानकारी को एक विचार तन्त्र में गुंथने का प्रयास किया, उदाहरणार्थ—न्यूटन का प्रयास।

कुछ आधारभूत वैज्ञानिक संप्रत्यय तथा वैज्ञानिक जानकारी के रूप में उनके स्वरूप का विकास—जैसे—जड़, प्राण, देश, काल, ऊर्जा, माप, समाज, राज्य, इतिहास आदि।

## सहायक पुस्तकें :

1. द इवोल्यूशन ऑफ साइंटिफिक थॉट—लेखक ए. दाग्नो प्रकाशक डॉवर प्रकाशन (द्वितीय संस्करण)।
2. एक्सपेरिमेंट—फर्स्ट ब्रॉडकास्ट इन द बी. बी. सी. थर्ड प्रोग्राम।
3. वैज्ञानिक दर्शन का उदय—राइखन वाटव (हिन्दी) प्रकाशक—मध्यप्रदेश हिन्दू ग्रन्थ अकादमी।

परिशिष्ट 'ख'

(Ref. Res. No. 5(IV) of the minutes)

एम.ए. अन्तिम वर्ष परीक्षा, 1983

दर्शन शास्त्र

पाठ्यक्रम विवरणिका, 1978 वार्षिक स्कीम

पृष्ठ 8 पर A IV(i) ऑस्टिन (Austin) को हटा कर पर्स (Peirce) रखा जाय।

A. IV—समकालीन दर्शन

(i) Peirce (पर्स)

पाठ्य पुस्तक—वै ल्यूज इन ए यूनिवर्स ऑव चांस सिलैक्टड राइटिंग्स ऑफ चार्ल्स एस पर्स—सम्पादित (द्वारा) पी. पी. वीनर :—  
(1 से 11 अध्याय तक) प्रकाशक—डब्लुडे एन्कर बुक्स/डापर एन्ड रो।

सहायक पुस्तकें :

1. पर्स एन्ड प्रेग्मेटिज्म—टल्ल्यू. बी. गैली पैंगेविन बुक्स।
2. द डबलपमेंट ऑव पर्सन फिलासफी—एम.जी. मर्फी—प्रकाशक  
हार्वर्ड यूनिवर्सिटी प्रेस/ऑक्सफर्ड यूनिवर्सिटी प्रेस।

(ii) पृष्ठ 11 पर बी (II) के पश्चात् एक नया वैकल्पिक विषय जोड़ा जाय—  
'Gr. B—Indian Philosophy'

Gr. B (iii) न्याय वैशेषिक—

पाठ्य पुस्तकें :

- (i) विश्वनाथ पंचानन—कारिकावलि (संपूर्ण) और शब्द खण्डान्त सिद्धान्त मुक्तावलि।
- (ii) एम.ए. अन्तिम वर्ष परीक्षा, 1983 :  
दर्शन शास्त्र पत्र IX.

The following shall replace the matter printed on P. (vii) of the syllabus, 78 Edition. (Annual Scheme).

(i) Collegiate Candidates :—

There shall be a IX paper of two equal parts of 5 marks each called—"Dissertation and discussion" :

Under the first part of this paper consisting of 50 marks candidates will write a dissertation in any philosophical subject under the guidance of the teacher of the department. The dissertation shall be type written and be of about 50 to 75 pages. The dissertation shall be submitted in duplicate so as to reach the office of the University by 30th April the latest.

The supervisor and an examiner appointed by the committee for the selection of examiner will independently evaluate the dissertation and the average of the two shall be the final score.

The second part will comprise discussion having 50 marks.

The discussion should be related to the subject matter of the dissertation as far as possible. Under this part, students shall be evaluated for their ability to discuss philosophical issues in the departmental seminars. At least eight departmental seminars should be held for this purpose in a year. Two or three teachers of the department shall evaluate the students performance and the average of their awards will be taken into account.

#### (ii) Non-Collegiate Candidates :—

There shall be a IX paper consisting of two equal part of 50 marks each — called “dissertation and Viva-Voce”. The scheme of the dissertation shall be the same as laid down for the collegiate Candidates. The Second part will comprise a Viva-Voce test of 50 marks. Non-Collegiate, candidates however, will have an option to offer—either a paper comprising dissertation-cum-Viva-Voce test or any full course paper from the various optional groups detailed in the syllabus.

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MINUTES OF THE SPECIAL MEETING OF THE BOARD OF  
STUDIES IN URDU, PERSIAN AND ARABIC, HELD ON  
THE 14TH DEC., 1979 AT 12.00 NOON IN  
THE UNIVERSITY OFFICE, JAIPUR.

**Present :**

1. Dr. Mohammed Ali Zaidi (Convener)
2. Dr. Zaheer Ahmed Siddiqi
3. Dr. Abul Faiz Usmani
4. Shri Mazhar Ali
5. Shri Feroz Ahmed
6. Dr. Fazle Imam Rizvi

*N.B.* :—Dr. Saiyed Saqib Hasan Rizvi could not attend the meeting.

1. With reference to the Ac. Council Res. No. 16 dated the 6th Oct., 1979 the Board recommended the detailed courses of study in the subject of "ARABIC" as an optional subject at the Three Years Degree Courses ( Vide Appendix-I )

2. With reference to the Board of Studies Res. No. 3, dated the 14/15th Sept., 1979 the Board offered no comments on the report of examiners and question papers set for the examinations of 1979. Further it was resolved that arrangement for proper proof reading of question papers be made as there were many printing mistakes in them.

3. The Board resolved that the certificate course in Urdu, already approved by the Concerned bodies be started in the University with effect from July, 1980.

4. The Board Unanimously resolved that certificate and Diploma Courses in Persian ( which were discontinued this year ) be re-started from the next session ( July, 1980 ).

The meeting ended with a vote of thanks to the Chair.

Sd/-M.A. Zaidi  
Convener,

## B.A. ARABIC COURSE.

I yr. T.D.C. Examination 1981 :—

*One paper* : 3 hrs. duration.

Min. pass Marks 36,

Max. Marks. 100

Syllabus and Division of marks :

1. Translation of Prose Text passages into Urdu/English	25
2. Translation of Poetry Text stanzas into Urdu/English	25
3. Translation from Urdu/English into Arabic.	20
4. Grammar	15
5. Life sketch of an author into Urdu/English	15
	<hr/> 100 <hr/>

*Book Prescribed* :—

1. Aljadid-fil-lughatul-Arabia Part-I Price Rs. 10.00  
Edited by Syed Ehsan-ur-Rehman.
2. Grammer :—The following topics only.  
Ilm-ul-hija, Haroof-ul-Hija, Alharkat-us-salasa, Alsakoon, Alshadda, Alharoof, Alzamiriyah, Walismiyah, Alharoof-ul-sahiya, Alharoof-ul-illat.  
  
Ilm-ul-sarf-wal-nehv, Sarf-ul-Mazi-wal-mazare-wal-ism-ul-fail-wal-ism-ul-mafool.  
  
Ism-ul-zarf, Ism-us-sawt, Aqsam-ul-Ism, Aqsam-uz-Zamir, Aqsam-ul-fail, Aqsam-ul-sifat.

*Book Recommended* :—

1. Arbi ka Moallim Part-I By Abdul Sattar Khan

II yr. T.D.C. Examination 1982 :—

*Paper I (Prose, Translation and History of Arabic Litt.)* :—

Division of Marks : Max. Marks 100.

1. Translation of Prose, Text passages into Urdu/English.	40
2. Translation of Urdu/English passages into Arabic.	20
3. Summary of a lesson.	10
4. Life sketch of a prose writer.	15
5. Question on elementary history of Arabic literature.	15
	<hr/> 100 <hr/>

*Books Prescribed :—*

1. Alqiratul Rashidah Part-I : Following twenty lessons only 3,4,5,6,7,8,9,12,13,18,22,24,29,35,36,44,45,46,49 and 58.
2. Alqiratul Rashida-al-juz-ussani, Murattiba Abdul Fatah Sabriya Ali Umar. : The following twenty lesson only.  
3, 4, 7, 10, 13, 15, 19, 23, 31, 32, 39, 40, 41, 43, 44, 47, 55, 56, 57 and 58.

*Book Recommended :—*

Arabi Adab ki Tarikh By Dr. Ehitshamuddin Nadvi.

*Paper II (Poetry, Translation, Grammar and Composition) :*

Division of Marks : Max. Marks 100

1. Extracts from Arabi Text poems into Urdu/English.	40
2. Translation of Urdu/English passage into Arabic.	20
3. Life sketch of a poet.	10
4. Composition.	15
5. Grammar.	15
	<hr/> 100 <hr/>



**Book Prescribed :**

1. Nakhbatul Adab Murattiba Shoba-e-Arabi, Muslim University Aligarh. Ishaat-e-Som.

The following pages only :—

From page 155 to 164

From page 172 to 176

From page 181 to 183

From page 185 to 190

**Grammar :—**The following topics only.

Ilm-ul-sarf-wun-nahu, Alfail-ul-Sahih, Alfail-ul-mufasssil, Alfail-ul-Majhool-ul-muzaif, Abwab-ul-fail-ul-salasi, Alnadid-ul-fail, Tafsil, Mufaaelat, Tafaal, Altafaal, Alfaal, Astafaal, Altamiz, Almustasna, Alism-ul-mutasarrifwa Ghair-ul-mutaasarraf, Alisma-alsittah-ul-Mafelat, Asma-ul-afaal, Afaal-ul-Madah-walzam, Afaal-al-Maqarebat, Albarf-ul-Qasam, Harf-ul-nida, Hamzatul-wasal-wal-qatta, Altehlul-nehvi.

**Book Recommended for Translation :—**

1. Darjat-ul-Adab, Jild awwal By Zafar Iqbal.

**III Yr. T.D.C. Examination 1983 :—****Paper I (Prose, Translation and History of Arabic Litt.) :—**

Division of Marks :

Max. Marks 100

1.	Translation of passages of prose (Text) into Urdu/English.	40
2.	Translation of Urdu/English passage into Arabic.	20
3.	Life Sketch of an author.	10
4.	Summary of a lesson.	15
5.	History of Arabic Literature.	15
		<hr/> 100 <hr/>

*Book Prescribed :—*

1. Alqiratur Rashida-al-juz-wus-salis.

*Books Recommended :—*

1. Darjat-ul-Adab Vol. II By Zhfar Iqbal.
2. Tarikh-ul-Adab-ul-lughat-ul-Arabiah. By Jirji Zaidan
3. Aladab-ul-jahiliya. By Dr. Taha Hussain.
4. History of Arabic Literature. By Clement Hurt.

*Paper II (Poetry, Translation, Grammar and Essay or letter.):—*

Division of Marks : Max. Marks. 100

1. Explanations of extracts from poems into Urdu/English.	40
2. Translation of a passage of Urdu/English into Arabic.	20
3. Life sketch of a poet.	10
4. Grammar.	10
5. Essay or letter.	20
	<hr/> 100 <hr/>

*Book Prescribed :—*

1. Nakhbatul Adab. Murattiba Shoba-e-Arabi, Muslim University Aligarh. Ishaat Som.

The following poems only :—

- (i) Alhamzetul Nabuwwat. Min-awwalaha Ali "wal-hasan min karam"—Alshouqiyat al ahmed shouqi.
- (ii) Alghazal-wa-alkalab—Alshouqiyat al ahmed shouqi
- (iii) Allughatul-Arabia—Diwan Mohd. Hafiz Ibrahim.
- (vi) Al Shair— " " "
- (v) Fi—lwehdat—Min-wajaul-mirat-ul-Abdur-Rehman alsiddiqi.
- (vi) Menajat—Miratul Nafsi al Abdul Rehman Albadvi.
- (vii) Al-haryata-fis-siyasata-almustaqmareen-Diwanur Rasani Albaghdadi.

- (viii) Sakran (Abbas Mehmood alaaqad)—Azhār-ul-  
ashaar Larbari.
- (ix) Fi-rasa-un-nafsi (Abdul Qadir Almazani)—Alash-  
shair-wannajdid.
- (x) Ash-shuhada (Khairuddin-Zarkale)—Diwan Khair-  
uddin.
- (xi) Ya-rafiqi (Ailya Abu Mazi)—Azharul-Ashaar.
- (xii) Raqadul Qalam (Ilyas Zbu Shabkat)— " "
- (xiii) Aghniya-reefiyat (Ali Mehmood)— " "
- (xiv) Ahkaz Tehzi (Nadvi Tauqan)— " "
- (xv) Ana (Nazil-ul-Mala-e-Kata)—Mukhtarat Minnush-  
shair-ul-Hadees-ul-Mustafi Badvi.

#### Grammar :

Sarie-Saghir-wa-Sarie-Kabeer, Khasatul Abwab,  
Afaal, Tafeel, Muza-e-lat, Is-tefaal, Tafawul-Tafaaal,  
Ifteal.

Aqsam-e-Jumla, Khaberyah, Inshaiyyah, Ismiyah,  
Faiilyah-ma-e-Aqsam.

Almarfooaat, Almansoobat-wal-mujaddadat-ma-a  
aqsam Altwabe.

#### Essay or Letter :—

Descriptive simple essay or letter.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN GEOGRAPHY HELD ON 17.9.1979 AT 12.00 NOON  
IN THE VICE-CHANCELLOR'S SECRETARIAT  
(NEW BUILDING), UNIVERSITY CAMPUS,  
JAIPUR.

Present :

1. Dr. Indra Pal (Convener)
2. Dr. A.K. Tiwari
3. Shri M.C. Srivastava
4. Shri H.S. Mathur
5. Dr. A.N. Bhattacharya
6. Dr. M.N. Nigam  
(Mrs.) Lakshmi Shukla (Special Invitee)

N.B. :—Shri S.B. Verma could not attend the meeting.

1. Under Section 34 (4) (iv) of the University Act, the Board elected Shri H.S. Mathur, Head of the University Department of Geography, as a member, other than the Convener of the Board of Studies, to serve on Committee for selection of Examiners in the subject for the year.
2. The Board scrutinized the statements of qualifications and teaching experience of teachers received from the University Teaching Departments, University Colleges, affiliated Institutions and other Universities for inclusion in the revised panel of examiners and prepared panel of examiners in terms of S. (25) (2) (a).
3. The Board *offered* no comments on the report of examiners and question papers set for the Examination of 1979.
4. The Board recommended no change in the courses of study and text books except Post-Graduate Examinations :—

## I. Pre-University Examinations of 1982.

## II. Degree Examinations :

- (a) First Year T.D.C. (Pass) Course Examination of 1982.
- (b) Second Year T.D.C. (Pass) Course Examination of 1982.
- (c) Third Year T.D.C. (Pass) Course Examination of 1982.

## III. Honours Examinations :—

- (a) Part I Exam. of 1982.
- (b) Part II Exam. of 1982.
- (c) Part III Exam. of 1982.

## IV. Post-Graduate Examination :—

- (a) Previous Examination of 1982.
  - (b) Final (Annual) Examination of 1983.
- } Vide Appendix I.

## V. M.Phil courses given in the Appendix as approved by Prof. Moonis Raza and Prof. A.N. Bhattacharya. Vide-Appendix-II.

5. The Board observed that at present there are no courses of study for the M.Sc. Geography examination under Annual Scheme for the M.Sc. (Prev) exam. of 1980 and Final exam. of 1981. The Board, therefore, *resolved to recommend* that the same courses of study recommended by the Board for the M.A./M.Sc. (Prev.) exam. of 1981 and M.A./M.Sc. (Final) exam. of 1982 duly approved by the Faculty, Academic Council and the Syndicate be adopted for the M.A./M.Sc. Prev. Exam. of 1980 and Final exam. of 1981 also and the Vice-Chancellor be requested to approve the recommendations as a special case under his emergency powers.

6. With reference to Ac. Council Res. No. 4A (ii), dated the 15/16th May, 1979, the Board *resolved to request the University*

to provide steno-cum-translator for writing the Hindi version and desired to maintain status-quo till then.

With reference to the Ac. Council Res. No. 11 dated 1st June, '79 and the Syndicate Res. No. 2 dated the 16th June, 1979 the Board made minor re-adjustment in the M.Sc. of the Syllabus and *resolved* that the same be got printed for the exam. of 1980 also in view of its foregoing recommendation No. 5.

8. It was noted that the Ac. Council vide its Res. No. 14, dated the 11th March, 1979 considered a proposal from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/63 dated the 24th Dec., 1978 to the effect that the students of M.A./M.Com. of the Institute be allowed to offer viva-voce at the M.A./M.Com. Final Examination and resolved that :—

- (i) The facility of offering viva-voce be permitted to the students of Correspondence Studies for the examination of 1979 be also extended to the students of the M.A./M.Com. exam. of 1980.
- (ii) In respect of the matter of allowing candidates to appear at the Viva-voce; the collegiate, the non-collegiate and the students of Correspondence Institute be treated at par and an option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending course of study of an alternative paper, wherever necessary, be referred to the Board of Studies under the purview of the Faculties where viva-voce is permissible.

The Board *resolved* that viva-voce Examination be conducted from the examination of 1980 as usual with the facility to offer paper IX in lieu of viva-voce courses of an alternative paper (Paper IX) to be offered in lieu of viva-voce have already

been recommended and no change is proposed in the course.

9. It was noted that the Ac. Council vide its Res. No. 10 (i) dated the 11th March, 1979 considered a proposal received from Dr. Satyendra Chaturvedi, Convener, B.O.S. in Hindi as contained in his letter dated the 13th Dec., 1978 reg. introduction of viva-voce in Dissertation for the M.A. Hindi Examination; and resolved as follows :—

- (i) The matter regarding introduction of viva-voce in Dissertation for M.A. Hindi Examination be referred for consideration to the Board of Studies in Hindi with the observation of the Council that it may consider abolition and if so, it may consider introduction of an alternative paper in its place, if necessary.
- (ii) A similar reference be also made to the Board of Studies where dissertation forms a part of the courses of study for the M.A. Examination to examine the feasibility of abolition of the provision of dissertation and providing an alternative paper in its place, if necessary.

The Board *resolved to recommend* that the viva-voce exam. be conducted in Dissertation.

10. The Board went through the letter and syllabi for population study in the Under-graduate and *recommended* that it must be considered by some Board of Studies

11. Professor Indra Pal, Convener, B.O.S. in Geography pointed out some difficulties in selecting papers in III and IV Semester Examination of Dec., 1979 and May, 1980 before the B.O.S. in Geography. The Board *resolved to recommend* that the syllabi as per appendix-III be approved with immediate effect and the Vice-Chancellor be requested to approve the recommendations for its immediate implementation.

The meeting ended with a vote of thanks to the chair.

Sd/- Indra Pal  
Convener

## APPENDIX—I

(Ref. Res. No. 4 (IV) of the minutes)

## SCHEME OF EXAMINATION

## M.A./M.Sc. Geography

(Annual Scheme)

Each theory paper	3 hour duration	100 marks
Viva-voce (Wherever permitted)		100 marks
Dissertation/Thesis/Survey		
Work Field Work,		
if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (whenever prescribed) of a subject/paper, separately.

3. A candidate for a pass at each of the Previous and the Final Examination shall be required to obtain (i) at least 36% marks in the aggregate of all the papers prescribed for the examination and (ii) atleast 36% marks in practical (s) wherever prescribed at the examination. Provided that if a candidate fails to secure atleast 25% marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination of the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60%	} of the aggregate marks taken together of the Previous and the Final Examinations.
Second Division	48%	
Third Division	36%	

4. If a candidate clears any Paper (s)/Practical (s) / Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz. (25/36% in the case of practical) shall be taken into account in respect of such Paper (s)/Practical (s)/Dissertation/Viva Voce



as are cleared after the expiry of the aforesaid period of three years provided that in case where a candidate required more than 25% marks in order to reach the minimum aggregate as many marks out of those actually secured by him will be taken into Account as would enable him to make up the deficiency in the requisite minimum aggregate.

5. The Thesis/Dissertation Survey report/field work shall be type written and submitted in triplicate so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examinations.

Only such candidates shall be permitted to offer dissertation/Field Work/Survey Report/Thesis (if provided in the scheme of examination) in lieu of a paper as have secured atleast 55% marks in the aggregate of all the papers prescribed for the Previous Examination in the case of annual scheme and I and II Semester Examinations taken together in the case of semester scheme, irrespective of the number of papers in which a candidate actually appeared at the examination.

6. The Viva-Voce test shall be held at the end of the Final year of the Course. The collegiate candidates, the non-collegiate candidates as well as the candidates belonging to the Correspondence Courses shall be allowed an option to offer Viva-Voce *provided that* they secure atleast 50% marks in the aggregate of all the papers Prescribed at the Previous/I and II Semesters taken together at the M.A./M.Sc./M.Com. examination.

## GEOGRAPHY

M.A./M.Sc. Annual Examination of 1980 and 1981

There will be four theory papers and a practical each in Previous and Final Examination. Each of the theory papers will be of 100 marks. Each theory paper will be of three hours duration. Candidates will be required to pass both in Theory and Practicals separately.

## Previous

- Paper I—Evolution of Geographical thought  
 Paper II—Structural and Dynamic Geomorphology.  
 Paper III—Principles and Theory of Economic Geography  
 Paper IV—Any one of the following :

- (a) Advanced Geography of Monsoon Asia and West Asia.
- (b) Comparative Geography of U.S.A. and U.S.S.R.
- (c) Advanced Geography of the three Southern Continents.
- (d) Advanced Geography of West Europe
- (e) Statistics in Geography.
- (f) Environmental Ecology.

*Practical :*

Distribution of marks will be as follows :

Laboratory and Map work test ( 4 hours duration )	40 Marks
Record work	20 Marks
Viva-vocē on Record work and camp work (10÷10)	20 Marks
Camp work	20 Marks

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Total 100 Marks

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## Final

Paper V—Advanced Geography of India

Paper VI—Any of the following :—

- (a) Geography of Population and Settlements.
- (b) Agricultural Geography
- (c) Industrial Geography
- (d) Transport Geography
- (e) Advanced Geomorphology

Paper VII—Any one of the following :—

- (a) Urban Geography
- (b) Climatology and Oceanography
- (c) Applied Geography
- (d) Pedology
- (e) Medical Geography

Paper VIII—Any one of the following :—

- (a) Political Geography
- (b) Anthropogeography
- (c) Bio-geography
- (d) Regional Planning
- (e) Meteorology
- (f) Research Methodology

*Practical :*

Surveying and Laboratory work

The distribution of marks in the Practicals will be as follows :

Lab. work paper-4 hours duration	30 marks
Field work and field viva-voce (4 hours duration)	25+5
Record work and Viva	10+5
Camp work	20+5

Total 100 marks

Previous

*Syllabus :*

Paper I—Evolution of Geographical Thought

3 hrs. duration 100 marks

Definition of Geography. The Nature and purpose of Geography (including concepts), postwar trends, inter-disciplinary trends, spatial implications of systems principles, behavioural geography, Geographical development in India.

Pre-scientific geographical ideas in Ancient and Medieval times : Indian influences, Geography of the Vedic Age and Geography of Puranas (first four chapter of Geography of Puranas by S.M-Ali). Contribution by Greek, Roman and Arab Geographers (Al-Biruni and Ibn-i-Batuta).

The emergence of scientific geography in the 18th and 19th centuries. Its place among other social

sciences. Founders of modern geography—Humboldt, Ritter, Leaders, of the first generation after Ratzel, Richthofen, Hettner, contribution of Vidal de la Blache, and Brunhes.

Dichotomy in geography : Physical and Human Geography. Determinism and Possibilism, Regional and Systematic Geography, Qualitative and Quantitative Geography, Theoretical and Applied Geography, Analytical and Synthetical, Geographical Diversity and Disparity, Idiographic and Nomothetic.

## Paper II—Structural and Dynamic Geomorphology :

3 hrs. duration

100 marks

The Constitution of Earth's Interior : The evidence of Seismology. Thermal State of the Earth's Interior, the Zoning of the Earth's Interior.

The Principle of Isostasy : The origin of the concept of Compensation—different views. Gravity Anomaly. Revival of Continental Drift Theory.

Earth Movements and Geological Structure : Secular and Sudden types of earth movements : Origin of Forces. Tectonic regionalisation of India. Mountain Building : Phases in Mt. Building, Geosynclines, Ancient Shields, Median Masses, Various theories of mountain building—Jeffreys, Kober, Joly, Daly, Holmes. Succession of Mountain Building Episodes Sea-floor Spreading Hypothesis.

Sub-aerial denudations, Nature and scope of geomorphology, weathering and erosion, fluvial process, mathematical form of river curves, the fundamental principles of the cycle of erosion and its presentation, the drainage patterns. Indian river system and river regime.

Concept of landscape evolution, Land form classification, Karst, Arid and Semi-arid, Glacial, Granitic Coastal, (To organise a Field Study and question to be asked on field techniques applied in such a field study)

The study of Erosion Surfaces : Concept of erosion surface, techniques of recognition and correlations of erosion surfaces with special reference to India and Rajasthan. Concept of applied geomorphology.

The study of Slope-Concept of slope in Geomorphology, old and new ideas on the evolution of hill-side slope elements (Hilltop, Hillside, Scree slope and Pediment) Detailed study of the ideas of Davis, Penck, Wood, A YOUNG, L.C. King, and Strahler on the development of slope.

The relief of the ocean bottoms, Coral Islands, Reefs, Atolls, Sea-level changes and coastal erosion, Geomorphology and Formation of Indian coasts.

*Books recommended :*

1. Ahmad, E. : Coastal Geomorphology of India, New Delhi.
2. Wooldrige and Morgan : An introduction to Geomorphology (Langmans, Green and Co. London).
3. Steers, J.A. : Unstable Earth (Methuen and Co. London)
4. Strahler, A.N. : Earth Sciences. (Harper and Row Publishers, New York).
5. Strahler, A.M. : Modern Physical Geography (John Wiley and Sons Inc., New York).
6. Young, A. : Slopes.
7. Thomas, M.F. : Tropical Geomorphology : A study of Weathering and Land form development in Warm Climate, Macmillan Delhi, 1974."
8. Pitty, Introduction to Geomorphology.
9. R.C. Sharma : Oceanography for Geographers (Chaitanya Publishers, Allahabad).
10. Thornbury A.K Geomorphology : Hall, (Prentice New York).
11. A.K. Lobeck : Geomorphology : (Mc Graw Hill Book Co. New York).
12. O.D. Von-Engelin : Geomorphology (Macmillan, New York).
13. CAM King of Embliton : Glacial and Pre-Glacial Geomorphology (Arnold).
14. University of Rajasthan Studies in Geography Vol. III 1970-71.

*Books for reference :*

1. Holmes Arthur : Physical Geology (Nelson)
2. W.M. Davis : Geographical Essays (Dover)
3. C.A. Cotton : Geomorphology (John Willey and Sons. New York).
4. Davison, C. : Theories of Earthquakes (Macmillan and Co., London).
5. Ramsey : Folding and Fracturing of Rocks.
6. Hodgson : Earthquakes and Earth-Structures.
7. White : Study of Earth.
8. Petti John : Sedimentary Rocks.
9. Lydolph : Physical Geography Laboratory Manual.
10. Platt : Simple Geological Structures.
11. Cotter : Oceanography.
12. Jeffreys H. : The earth—Its Origin, History and Physical Constitution.
13. Soovel : Atlas of Land Forms

## Paper III—Principles and Theory of Economic Geography

3 hrs. duration

M.M. 100

Definition, scope and methods, and branches. Distinction between Economic and Commercial Geography. Concept of economy, Simple model of economy, Environmental relations of economy. Spatial structure of economy..

Principal human occupations.—Factors governing production. Nature of agriculture—subsistence agriculture, tropical plantations, commercial grain and corn region of U.S.A. mixed farming in North-Western Europe, Mediterranean agriculture. Stock raising and its products.

Spatial distribution of energy Each source of a power as supplementary to the other, Atomic power development and non-proliferation.

Iron and steel industries. Aluminium industry, Paper and pulp, Chemical, Fertilizer.

Trade and transportation : Inland waterways, trans-continental railways, pipe lines, Oceanic

trade routes, Ports and their hinterlands, Aerial transportation, International trade between the poor and rich countries.

Location movement and interaction in the simplified conomic landscape. Heterogeneous land surface : spatial variations in resource quality and availability, impact on economic activity.

Spatial variation in transport costs : Location and structure of transport costs and the location of economic activity-transportation development and spatial impact.

Spatial variations in production cost : Labour, capital, technical knowledge, locational impact. Demand scale and agglomeration : Spatial variation in demand-economic scale-spatial competition principles of agglomeration.

Decision making process : a behavioural view of decision making—Locational decision.

Concept of time and space in the economic development, initial triggers to development—cumulative growth—long term growth trends.

Concept of Economic Region : Formation of economic regions in India.

*Books :*

Lloyd and Dicken : Location in space : A Theoretical Approach to Economic Geography.

M.C. Cart and Lindberg : A Preface to Economic Geography. Hodder and Lee : Economic Geography.

Smith D.E. Industrial Location : A Economic Geography cal Analysis.

Cox, K.P. Man, Location and Behaviour—An Introduction to Human Geography-

1. Smith J.C. & Phillip M.O. : Industrial and Commercial Geography (Henry Holt.
2. Roepke H.G. : Reading in Economic Geography (Wiley and Sons).

3. Miller E.W. : A Geography of Manufacturing.
4. Ghose. B.C. : Industrial Location
5. Estall R.C. & Buenaman : Industrial Activity and Economic Geography.
6. Carlson A.S. : Economic Geography of Industrial Material.
7. Boesh. H. : A Geography of World Economy
8. Bengston N.A. & Royen M.V. : Fundamentals of Economic Geography (Prentice Hall New York)
9. Alexander J.W. : Economic Geography (Prentice Hall New York).
10. Britton Joh N.H. : Regional Analysis and Economic Geography.
11. Sargent : Ports and their Hinterlands.
12. Morgan : Ports and Harbours.
13. Guha and Chatterjee : A New Approach to Economic Geography.
14. M.V. Royen and N.A. Bangston : Fundamentals of Economic Geography (Prentice Hall, New York).
15. C. Langdon White Paul F. Griffin and others. : World Economic Geography.
16. Allexander J.W. : Economic Geography (Prentice Hall New York).
17. Hutington and Ellswarth : Principles of Economic Geography.
18. Maccarty Harold H & Lindberor James B. : A Preface to Economic Geography (Prentice Hall, New York).
19. Renner T.H. & Others : World Economic Geography.
20. Robson H. : Economic Geography. (Mac-Donald London).
21. Thoman R.S. : The Geography of Economic Activity (Mc raw Hill, New York).



22. Fried Sykes : Food Forming and the future.
23. P. Sen Gupt and Gulyna Sydasuk. : Economic Regions and Regionalisation in India
24. Zimmerman : World Resources and Industries (Harper and Co.) New York.
25. Statseman Year : Book
26. F.A.O. Year Book
27. U.N.O. Statistical Year Book
28. Indian Year Book

Paper IV—Any one of the following :

Paper IV—(a) Monsoon Asia and West Asia

3 hrs. duration

Section A

100 marks

*Note* :— Questions will be asked from both Sections A and B and candidates will be required to attempt two questions from each section.

Unity in Diversity in Monsoon Asia, Importance of location, Geological structure, Physiography Drainage basins, Climatic regions, Natural vegetation, Mineral wealth.

Population and its characteristics. Power resources, Agricultural characteristics. Importance of Monsoon lands as purveyors of food stuffs and raw materials. Natural rubber and its world trade. Tea, coffee, Spices, Developments of transportation and accessibility.

Singapore—Problems of industrial expansion, port development, human resource, Philippines—population and food problem and development programmes. Thailand—Problem of urbanisation and regional division and development programmes. Indonesia—Population densities and its trends, mineral resources, types of agriculture, sugar industry. Burma—regional divisions, agricultural, forest and mineral resources. Hong Kong urban growth, changing trade pattern, industrial revolution, changing land use pattern. Korea Agricultural and industrial development.

China—State farms and peoples communes, population and food supply, industrialisation, changing pattern of industrial complex, Red Basin. The Hwango Ho, Yagtze Kiang and Sikiang basins.

Japan—Coal resources, water power, conservation of forests, copper production, tea, soyabean and rice culture, fishing industry, motor vehicle, steel and silk industries. Industrial Belt.

### Section—B

Israel, Jordan

Afghanistan and Turkey.

Saudi Arabia, Iran, Iraq

Gulf States

The study under the following units.

Strategic importance of location. Geological structure physical features and physiographic divisions. Drainage pattern and river basins, Climatic controls and Climatic divisions, Natural vegetation and vegetational divisions, Demographic characteristics.

Natural resources—Forest, soil mineral livestock  
Development of power resources, Development of  
Agriculture—Agricultural crop regions (belts).

Petro-chemical industries, their location and distribution  
Transportation networks (Rail, Road, Air, Water and Pipelines).

International trade.

Programmes for future development.

### *Books Recommended :*

- |                |   |
|----------------|---|
| Dobbey, E.H.G. | : South-East Asia (John Willey and Sons, New York).   |
| Fisher, C.A.   | : South East Asia, A social Economic and Political Geography (Methuen and Co., Ltd., London). |
| Robequain C.   | : Malaya, Indonesia, Borneo and Phillpines, Longman, Green and Co. New York.                  |

- Trewartha G.P. : Japan, The University of Wisconsin Press.
- Pruly, Dempost : Japan (Mathuen Co., Ltd. London).
- O. Jia Bee : Malaya's Land and People.
- Dobbey E.H.G. : Monsoon Asia (Univ. of London Press London).
- Rawson R.R. : Monsoon Lands (Hutchinsons University Library Series).
- Ginsburg N. : The Pattern of Asia : (Prentice Hall Inc. New York).
- Stamp L.D. : Asia, (Mathuen and Co. London).
- Gressec G.B. : Land of 500 Millions.
- Robinson : : Monsoon Asia
- Fisher, W.B. : The Middle East.
- Hogarth D.G. : The Near East.
- Keen B.A. : Agricultural Development of Middle East..
- Bonne A. : The Economic Development of Middle East.
- Sulton L.P. Elwall : Iran.
- W.S. Hass : Iran
- N.S. Roberts : Iran
- J. Jones : Turkey
- V.H.W. Dawson : Date Culture in Iraq
- W. Willcocks : The Irrigation of Mesopotamia
- Ginsburg N. : The Pattern of Asia : (Prentice Hall Inc. New York).

*Reference Reading :*

- Hall & Beasdlsey : Japan
- Uye
- Uyehara : Induatry and Trade of Japan
- Ackuerman, E.A. : Japan's Natural Resources Developing.
- Chatterjee : Countries of the World.
- Cobb, R.T. : Monsoon lands Part I (University Tutorial Press Ltd.)
- Hall & Beasdsley : Japan

- Dudley Stamp : Asia Hindi Translation (Central Book Depot, Allahabad).  
 O.H.-K. Spate : Changing Map of Asia (Methuen and Co., London).  
 and W.J. & East.  
 Cressey. G.B. : Asia's Lands and People. (McGraw Hill Book Co., New York).  
 Sencer, J.E. : Asia East by South.  
 Ackverman, E.A. : Japan's Natural Resources.

Section A will be on Monsoon Asia and B on West Asia

Paper IV (b)—Advance Regional Geography of U.S.A. and U.S.S.R.

3 hrs. duration

100 marks

Their study under the following :

*Note* : Questions will be asked from both Section A and B, and candidates will be required to attempt two questions from each section.

Strategic importance of location. Geological structure, physical features and physiographic divisions. Drainage pattern and river basins, Climatic controls and Climatic divisions, Natural vegetation and vegetational divisions, Demographic characteristics.

Natural resources—Forest, soil, mineral, livestock, Development of power resources, Development of Agriculture—Agricultural crop regions (Belts).

Important industries, their location and distribution. Transportation networks (Rail, Road, Air, Water and Pipelines).

International trade.

Detailed study of important regions—economic and industrial.

Programmes for future development.

Section A will consist of U.S.A. and Section B of U.S.S.R.

*Books Recommended : U.S.A.*

1. Ostrolenk, B. : Economic Geography of the United States (Thomas Y. Crowell Co. New York).
2. Shaw, E.B. : Anglo-American, A Regional Geography (John Willey and Co. New York).
3. Smith J.B. and Philip, : M.G. North America : (Harcourt Brace, New York).
4. Alexander : The North Eastern United States (D. Van Nostrand Co., N.Y.).
5. Hait : The South Eastern United States (D. Van Nostrand Co. N.Y.).
6. Russel, I.C. : North America (Oxford Univ. Press).
7. White, C.L. and Foscoe, E.J. : Regional Geography of Anglo America (Prentice Hall, N.Y.).
8. James, P.E. : Latin America (Cassel and Co. London).
9. Marthin, M.C. : The United States at Work (George G. Harrap and Co. N.Y.).
10. Mc Carry H.H. : Geographic Basis of America Economic Life (Harper and Co. London).

*Books Recommended : U.S.S.R.*

11. Mirow, N.T. : Geography of Russia (John Willey and Sons. N.Y.).
12. Turin, S.P. : The U.S.S.R. (Matheun and Co. London).
13. Shabad, T. : Geography of U.S.S.R. (Oxford Univ. Press, Oxford).
14. Barg, L.S. : Natural Regions, of U.S.S.R. (Mac. Millan and Co. New York)
15. Balzak, S.S. : Economic Geography of Soviet Union, (Mac Millan and Co., N.Y.).

16. Hodkins : Soviet Power, Energy, Resources, Production and Potentials (Prentice Hall, New York).
17. Schwartz, H. : Russia's Social Economy, Prentice Hall of India (Delhi).
18. Robinson, H. : The U.S.S.R. (University Tutorial Press Ltd.).
19. Lydolph : Geography of the U.S.S.R. John Willey and Sons (New York).
20. Millar J. : The Soviet Russia (Methuen and Co. London).
21. T. Shabad : Industrial Resources of U.S.S.R.

Paper VI (c) Advanced Regional Geography of Three Southern Continents.

3 hrs. duration

100 marks

Their study under the following heads :—

Strategic importance of location. Geological structure. Physical features and physiographic divisions. Drainage pattern and river basins, Climatic controls and Climatic Divisions. Natural vegetation and vegetational divisions, Demographic characteristics.

Natural resources—Forest, soil 'mineral' livestock. Development of power resources, Development of Agriculture—Agricultural crop regions (Belts).

Important industries, their location and distribution, Transportation networks (Rail, Road, Air, Water and Pipelines).

International trade

Detailed study of important regions—economic and industrial.

Programmes for future development

*Books Recommended :*

1. Suggate L.S. : Australia (George G. Harrap and Co., London).
2. Taylor G. : Australia (Methuen and Co., London).

*Regerence Reading :*

1. Robinson K.W. : A World Survey Vol IV Australia New Zealand and South Pacific.
2. D.C. Money : Australia Pt. I, New Zealand Pt. II (University Tutorial Press, London).

*Books Recommended :*

1. Suggate L.S. : Africa (George G. Harrap and C., London).
2. Stamp L.D. : Africa (John Willey and Sons, New York).

*Reference Readings :*

1. R.J. Harson : Africa and the Islands (Longmans Green Co., New York).
2. Butland G.J. : South Africa
3. Tolinson Coysh : Three Southern Continents (University Tutorial Press, London).
4. Firan Carpson : Africa (U.T.P. London).
5. J.H. Wellington : South Africa—Geographical Study (Cambridge University Press (London).
6. Hance, W.A. : The Geography of Modern Africa.

Paper IV (d) Advanced Regional Geography of West Europe  
3 hrs. durtion 100 marks

Strategic importance of location. geological structure, physical features and physiographic divisions.

Drainage pattern and river basins, Climatic controls and climatic division, Natural vegetation

vegetational divisions, Demographic characteristics.

Natural resources--Forest, soil mineral livestock  
Development of power resources, Development of  
Agriculture--Agricultural crop regions (belts.)

Important industries, their location and distribution,  
Transportation networks (Rail, Road, Air,  
Water and Pipelines).

International trade.

Detailed study of important regions—economic  
and industrial.

Programmes for future development.

*Books recommended :*

1. Houston : Social Geography of Europe.

Consult all the latest books

Paper IV (e) Statistics in Geography

3 hrs. duration

100 marks

Statistical data, Various types of averages;  
Measures of dispersion and their calculation,  
Normal frequency distribution curve and its  
uses. Binomial and Poission frequency distributions.

Characteristics of samples, Methods of sampling,  
Statistical significance, Diagrams, Standard error  
of the difference, student's test and Snedecor's  
Variance Ratio Test.

Product moment correlation coefficient/Spearman's rank correlation coefficient, Comparison of the two correlation coefficients. Regression line and concidence limits.

The Chi-squared Test and its uses, Fluctuations and trends, Logarithmic graph, spatial distribution.



*Books recommended :*

1. Gregory, S. : Statistical Methods and the Geographer, (Longmans)
2. King, L.J. : Statistical Analysis in Geography (Prentice-Hall).

*Reference Books :*

1. Moroney, M.J. : Facts from Figures (Penguin).
2. Crozon and Cowden : Applied General Statistics, (Prentice-Hall).
3. Haggett, P. : Locational Analysis in Human Geography, (St. Martins Press, New York).
4. John Silk : Statistical Concepts in Geography, George Allen and Unwin, London £ 10.
5. Johnston, R.L. : Multivariate Statistical Analysis in Geography.
6. Mahmood Aslam : Statistical methods in Geographical Studies (Sanjay Enterprises, New Delhi).

Paper IV (f) Environmental Ecology.

( Syllabus to be recommended )

**PRACTICALS**

Distribution of marks will be as follows :

1. Laboratory and Map work test (4 hrs.)	40 marks
2. Record of lab. work	20 marks
3. Camp work	20 marks
4. Viva-Voce on record work and Camp work (10+10)	20 marks
Total	100 marks

*Note* :—For Non-Collegiate candidates marks of camp work will be allotted to record work and viva-voce equally.

**Laboratory and Map Work :**

- (i) The Art and Science of Cartography, History of Maps Materials Techniques and Preparation of Maps.

- (ii) Enlargement, Reduction and Finding of Area of Maps, Use of Planimeter :
- (iii) Study of geological maps and preparation of their section and interpretation.
- (iv) Interpretation of Weather-Maps and Weather forecast,
- (v) Elementary Trigonometry.
- (vi) Map Projections :

Projections and their classification :

Construction and characteristics of any three from each of the four classes of projections (Mathematical constructions).

### I. Conical projections :

- 1. Equal Area with One Standard Parallel (Lambert's Projections). 2. Equal Area with Two Standard Parallels (Albert's Projection), 3. Bonne's, 4. Polyconic, 5. International.

### II. Cylindrical Projections :

- 1. Cylindrical Equal Area. 2. Mercator's 3. Gall's Stereographic.

### III. Zenithal Projections :

- 1. Gnomonic (a) Polar case (b) Eq. Case, 2. Stereographic (a) Polar case, 3. Orthographic (a) Polar case (b) Eq. Case, 4. Equal Area (a) Polar case (b) Eq. Case, 5. Equidistant (a) Polar Case (b) Eq. Case.

### IV. Conventional Projections :

- 1. Sinusoidal, 2. Mollweide, 3. Interrupted Mollweide and Goode's 4. Interrupted Sanson Flamsteed (Homolosine), 5. Aitoff's.

Choice of Projections, Projections used for maps produced in India.

Geographical Maps and Diagrams : Computation of data, preparation of frequency tables, representation of data by Histograms and Ogives, Finding Skewness. Computation of Mean-Median and Modes. Deviations—Standard Deviations and Mean Deviations and finding out of correlations. Theoretical basis of Nearest Neighbour Analysis. Practical exercises on Nearest Neighbour Analysis, Net work Analysis, Locational

Analysis of urban centres. Coefficient Variation, All these be computed from the Statistical data, preferably based on State, District, Tehsil and Community Development Block as unit areas and the following types of maps and diagrams"be prepared.

One exercise on each of the following and their interpretations.

Isopleth, Choropleth and Chorochromatic map, Isochrone map. Population Potential surface map, Population Pyramids, Variability ( Rainfall ) map.

Three dimensional diagrams and cartograms of economic and Social data.

**Diagrams :** Polygraph, Semi-log and loggraphs, Trilinear chart, Circular graph ( Climatograph ), Taylors/Fosters Climograph, Annual water deficiency and water surplus graph,

Survey Camp (At least a week's intensive survey camp ) be organised to collect primary data which should be utilized for different kinds of statistical diagrams and maps. as mentioned above, in support of the report to be produced about the Survey Camp.

*Books Recommended :*

- |                            |   |
|----------------------------|---|
| Lawrence                   | : G.R.P. Cartographic Methods, London, 1971.                      |
| Robinson, A.H. & R.D. Sale | : Elements of Geography, Wileg International Inc. New York, 1969. |
| Dickinson, G.C.            | : Maps and Air photographs, London, 1969.                         |
| Dickinson. G.C.            | : Statistical Mapping and Mapping Statistics; London.             |
| Raise, Erwin               | : General Cartography   |

**Note :—**Private ( Non-Collegiate ) candidates are required to attend 4 weeks of Training Course which will start from 10th January in Geography Department of University of Rajasthan. Further correspondence in this respect should be done with Geography Department/ P.G. Departments of D.A.V. College, Ajmer and Sriganganagar.

## M.A. Final

## Paper V—Advanced Geography of India.

3 hrs. duration

100 marks

Geological structure and its relation with relief and distribution of minerals. Physiographic divisions. Climatic divisions, soil regions, characteristics and distribution.

Resource potential—a general appraisal.

(i) Land resources (ii) Water resources (iii) Vegetational resources, (iv) Animal resources and (v) Human resources.

Resource development :

(i) Land utilisation (ii) Irrigation (iii) Agriculture (iv) Livestock development (v) Mineral development (vi) Power development, (vii) Industrial development, and (viii) Transport development.

River Basins of India, riverian problems of sharing water and their planning, Economic regions of India and Regional problems.

Rajasthan—Regional studies

(i) Marusthal 2. Bangar 3. Chambal Valley 4. Aravalli (ii) Power Development in Rajasthan, (iii) Irrigation Development in Rajasthan. (iv) Industrial Development in Rajasthan.

*Books Recommended :*

- |                         |  |
|-------------------------|--|
| 1. GOI—                 | : Five Year Plans of India.  |
| 2. NCAER                | : Techno-Economic Survey Reports of various States in India, Central Board of Water Power and Irrigation in India-Development of Irrigation in India-1965. |
| 3. Ramdas, L.A.         | : Crops and Weather in India-I.C.A.R. New Delhi, 1960.   |
| 4. Singh R.L.           | : India A Regional Geography N.G.S.I. Varanasi, 1971.  |
| 5. Galyna and Sen Gupta | : Economic Regions and Regionalisation in India, 1968.   |

6. Choudhary, M.R. : Indian Industries Development and Location.
7. O.H.K. Sapte : Geography of India and Pakisthan (Mathuen and Co., London)
8. Krishnan, M.S. : Geology of India and Burma (Law Journal Office, Madras).
9. Kumar, L.S.S. and others : Agriculture in India Vol. I & II (Asia Publishing House, Bombay).
10. Indian Year Book : (Latest Edition) Publication Divisions, Delhi.
11. Techno-economic Surveys of States (N.C.E.A.R.) Delhi
12. Irrigation Atlas of India
13. Chatterji, S.B. : Climatology of India (Calcutta University, Calcutta).
14. T.R. Sharma : Location of Industries in India (Hindu Kitab, Bombay).
15. Gazetteers of India : Publication Division, New Delhi.
16. S.P. Roy, choudhary: Land and Soil (National Book Trust, New Delhi-1).
17. Times of India : Hindustan Year Book (Latest Edition).
18. Sinha : A Treatise on Industrial Minerals.
19. Gensser : Geology of the Himalayas.

Paper VI (a) Geography of Population and Settlements

3 hrs. duration

100 marks

*Notes:*—Question will be asked from both sections A and B and candidates will be required to attempt two questions from each section.

*Section A*

Concept and methods, sources and analysis of population data, population distribution, world population trends, Geographical, cultural and demographic factors.

General theories and laws of population; distribution, urbanisation and its trends.

Patterns and problems of distribution of urban and rural population in different areas. Patterns of population growth and trends, implications for the developed and developing countries/regions.

Population movements and migrations, patterns and models, method and problems of populations mapping.

### *Section B*

Principles, scope and methodology in settlement geography development and recent trends.

Rural urban dichotomy and problems of identification. Problems of classification and methodology, Functional approach in classification. Methods and structure of Rural settlements. Methods and structure of Urban settlements.

Central place hierarchy and spatial relationship. Urbanization and its trends.

Case studies in settlement geography in India. Geographical aspects of modern colonisation. Distributional Pattern of house types in India.

### *Books Recommended :—*

1. Baker, G.P.H. : The Geography of Rural Settlements, 1969.
2. Berry, B.J.L. : Geography of Market Centres and Retail Distribution, Englewood Cliffs, 1967.
3. Berry, B.J.L. : The Goals of City Classification Handbook pp. 1—8
4. Ambrose, Peter : Concepts in Geography I. Settlement Patterns, Longman 1970 P—297.
5. Census of India : House types and settlement. Pattern of villages in India.
6. Brunhes, J. : Human Geography, New York
7. Carter, H. : Urban Geography, New York.
8. Singh, R.L. : Rural Settlement in Monsoon Lands. Varanasi, 1974.
9. Handson, P.S. : A Geography of Settlement. Mac Donald and Evans, Ltd., London, 1970.

10. Sharma, R.C. : Settlement Geography of Indian Desert, Delhi-1972.
11. Smailes : Geography of Town.
12. Harrison Church : Modern Colonization
13. Determinants and ( UNESCO ) : Consequences of Population Trends.
14. Brayan : Man's Adaptation of Nature.
15. Chisholm : Rural Settlement and Land Use, London, 1969.
16. Dickinson : City Region and Regionalism
17. Abercrombie, P. : Town and Country planning.

Paper VI(b) Agricultural Geography (Elements and Applied)

3 hrs. duration

100 marks

**Elements of Agricultural Geography**

Concept of agriculture. Origin and dispersal of agriculture. Development of agriculture through the ages in important agricultural areas of the world. Trends and practices.

Three sets of factors influencing agricultural patterns and farm techniques.

Set 1-Physical : Relief, slope, soils, water—its  
Factors availability, climate (rainfall, temperature sun-shine, humidity, winds).

Set 2-Economic : Land tenure, transport, mar-  
Factors keting and trade, prices, level of mechanization, labour, capital, fertilizers, irrigation.

Set 3-Cultural : The food habits, castes, pop-  
Factors ulation, religion, land ownership, govt. policies, literacy etc.

Water : Water resources, quality of water for irrigation, water quality criteria, various methods of irrigation and their comparative advantages. Soil and water balance.

Types of agriculture—shifting cultivation, plantation agriculture, Mediterranean type, collective and state farming,

extensive and intensive agriculture, dry farming etc. and their characteristics.

### Applied Agricultural Geography :

Agricultural land-use : Concept, history of agricultural land use surveys; principles, objectives, policies and planning of land-use surveys. Land classification : need and basis of land classification. British pattern, American pattern, Indian pattern. Irish pattern of land of classification. Land-use data : sources, types, mapping and problems.

Models in agricultural land-use concept, need and principles, Von Thünen's Agricultural Location theory, Coleman's model. Preparation and planning of a detailed proforma for land-use surveys (land-use survey of a village be conducted).

Measurements of the levels of agricultural development—Concept and methodology. Agricultural regionalization—Concept, methods of delineation (including statistical methods).

Crop-ranking, Crop-combination regions—meaning, need and methodology. (Detailed study of Kendal's, Weaver's Doi's, Kostrowiski's, Spearman's methods). Cropping, intensity, Crop-diversification—methods and deductions.

Agricultural efficiency—Concept, methods of measurement Nutrition and food balance sheet. Crop-land-use and deficiency diseases.

*Note* :—(The candidates are expected to make personal studies. A field-trip be organized and question be asked in examination).

### *Books recommended :*

1. ICAR : Soil and Water Conservation Research (1956-71).
2. ICAR : Soil Conservation in India.
3. Sachchidananda : Social Dimensions of Agricultural Development. National Publishing House, Delhi.



4. Us. Kellog. : Soils That Support.
5. Mamoria C.B. Kitab : Agriculture Problems in Mahal. India.
6. Motghan and Mun-ton-Methuen. : Agriculture Geography.
7. Ed. United States : U.S. Manual of Soil Surveys. Deptt. of Agriculture, U.S.A.
8. Shrinath Singh, Heri- : Modernization in Agriculture. tage Publishers M-116 Connaught circus, New Delhi-110001.
9. Joshi, Indore. : Agricultural Geography of Narmada Basin
10. K.Z. Amani Interna- : Agricultural Land Use in tional Book Traders, Aligarh District. A.M.U. Market Aligarh-202001.
11. Symons L.G. : Land-use in Ireland
12. Stamps L.D. : Applied Geography
13. Stamp L.D. Longman : Land of Britain, its uses and misuses.
14. Kostrowickie Z. : Agricultural Typology. Polish Academy.
15. Shafi M. (Aligarh : Land Use in Eastern U.P. University Press).
16. : Developing Rural India.
17. Elliss Coleman. : Directory of Land-Use survey.
18. Ali Memorial ed. by : Applied Geography. V.C. Mishra, N.P. Ayyar, Mrs. P. Kumar, Sagaur University, Press, Sagar,
19. Ed. Singh R.L. : Applied Geography. B.H.U. Varanasi-5.
20. Singh, Jasbeer : Agricultural Atlas of India Vishal Publishers.
21. Singh Jasbeen : Agricultural Geography of Haryana.

22. Noor Mohammad : Agricultural Land use in India.  
Inter-India Public. Delhi.
23. Ali Mohammad : Studies in Agricultural Geography Pajesh Publication New Delhi-1978.
24. Ali Mohammad : Situation of Agriculture Food and Nutrition in Rural India Concept Publishing Co. Delhi.
25. Ali Mohammad : Dynamics of Agricultural Development in India, Concept Publication Co. Delhi.
26. Singh, P.P. Govind : New Seeds Adoption and Yield. Sterling Publication Pvt. Ltd. New Delhi.
27. Symon Leslie : Agricultural Geography G. Bell and Sons Ltd. London 1967.
28. Singh, R.L. (ed) : Applied Geography B.H.U. Press Varanasi-5.
29. Kostrowickie, Z. : Agricultural Typology Polish Academy Warsaw.
30. Stamp, L.D. : Land of Britain its uses and mis-uses. Longman.
31. Shafi, M. : 'Land-use in Eastern Uttar Pradesh' Aligarh University Press, Aligarh.

Paper VI(c) Industrial Geography—Theory of Industrial Location :—

3 hrs. duration

100 marks

Location factors in manufacturing, concept of optimum location. Signification of cost and price. The Least Cost School and the Transport Cost School. The Market Area School, the Marginal Location School, the Behavioural School.

The Reduction in Location of Materials. The Copper Industry, the Aluminium industry, the Pulp and Paper Industries, The Cement Industry.

New Trends in Industrial Geography. Testing Location Theory. Empirical Studies, Significance of Enterprise and Firm.

Important Industrial Regions of the world; selecting one from each of U.S.A., U.S.S.R. Japan and Britain and West Europe.

Important Industrial regions of India.

The changing character of geographical concentration and impact of technological change., changing character of industrial regions.

Formation of Industrial regions, Industrial regions in India.

Study of the following regions.

- (i) The Hooghlyside Industrial Region.
- (ii) The Damodar Valley Industrial Region.
- (iii) The Ruhr Basin Industrial Region.
- (iv) The Great Lakes Industrial Region.

Influence of Power and Geographical Inertia in Manufacturing industries :

The Textile Industry.

Multi-locational industries.

Iron and Steel, Aluminium. Oil Refining.

Market Oriented Industries.

Furniture, Textile Machinery.

Footlose Industries.

Automobile, Commerical Ship Building.

Raw Material Oriented Industries. The locational importance of reduction in materials.

The pulp and Paper Industry.

The Cement Industry.

### *Books Recommended :*

1. Lloyd and Dicken : Location in space : A Theoretical Approach to Economic Geography.
2. M.C. Cart and Lindberg : A Preface to Economic Geography.  
Hodder and Lee Ec-  
onomic Geography

3. Smith D.E. Industrial : A Economic Geographical Location, Cox K.P. Analysis, Location and behaviour—An Introduction to Human Geography.  
Man,
4. Riley R.C. : Industrial Geography. 1973 Chalto and Windus, London.
5. Alexanderson : Geography of Manufacturing Gunnar (Englewood Cliffs, N.J.).
6. Alexander, J.W. : Economic Geography (Prentice Hall, New York).
7. Bengston, N.A. : Fundamentals of Economic Geography (Prentice Hall New York).
8. Boesh H. : A Geography of World Economy (D Van Nostrand).
9. Britton, John N.H. : Regional Analysis and Economic Geograpqy (G. Bell and Sons, London).
10. Carlson, A.S. : Economic Geography of the Industrial materials (Rinchart Pub. Corp., New York).
11. Estall, R.C. and : Industrial activity and economic geography (Hutchinson Puchanan R.O. and Co., London).
12. Ghose, B.C. : Industrial London.
13. Hoover, E.M. : The Location of Economic Activity, (Mc Graw Hill Books Co., New York).

Paper VI(d) Geography of Transport :

3 hrs. duration

100 marks

The Geographical study of transportation, definition, theory, growth and Scope, Network growth models.

Nature of inter-regional flows, Basis for interaction, Models of spatial interaction, distance-decay theory, gravity models, potential surface models.

Modal accessibility and hinterlands accessibility and land use. Transport economics. Transport problems of metropolitan areas.

Developments of transport system in India.  
 Role of transportation in regional development  
 in India. Major transportation in regional  
 development in India.

*Books :*

1. Saafe, E.J. and H.L. Gautier—Geography of Transportation, Prentice Hall, Englewood Cliffe, 1973.
2. Eliot H. and E. Michael, Eds. Transportation Geography Comments and Readings, M.C. Growth. M.S. 1974.
3. Hagget, P. and Red, Chorley. Network Analysis in Geography St. Mairni, N.Y. and Edward Arnold, Loudh, 1919.
4. Kauestry, K.J. Structure of Transportation Networks, University of Chicago, Chicago-1963.
5. Berry, B.J.L. Essays on Commodity flow and the Spatial Structure of Indian Economy, University of Chicago, Chicago-1966.

Paper VI(e) Advanced Geomorphology :

3 hrs. duration

100 marks

The development and nature of Geomorphology :  
 its relation to the earth and environmental  
 sciences. Various Schools of Gemorphology,  
 European Schools.

Endogenetic and Exogenetic Processes.

Rock and Rock Structures.

Fluvial Processes.

Hydraulic cycle and water balance; discharge of  
 ground water; Character and measurement of  
 run off, rivers : dynamics of flowing water,  
 sediment transportation, morphology of channels,  
 evolution of long profiles, riverine, landforms,  
 Characteristics and development of drainage  
 basins, growth channel network relation of  
 rivers of lithology and structure.

Weathering processes and residues : Physical  
 chemical and bio-chemical characteristics of  
 soil classification.

Development of slopes; characteristics and  
 associated processes, relation of rocks and  
 weathering processes, theories and models.

Aeolian processes; physics of sand-movement, constructional and erosional land forms, evolution of various features of arid lands.

Coastal processes and forms : wave, currents wind, beach form, coastal forms, and classification of shorelines, change in sea level.

The nature and efforts of glacial processes, mountains and lowlands. Landforms of erosion and deposition, periglacial processes and landforms' landforms, of formerly glaciated areas.

Quantitative geomorphology; Development of the new concept and quantitative techniques in geomorphology, quantitative analysis of the land-form, developed due to various geomorphic processes, quantitative analysis of the drainage basins and hill slopes development, delineation of the catchment boundaries and calculation of the morphometric characteristics of the drainage basins, statistical analysis of the morphometric and hydrological characteristics of the drainage basins and their inter-relationships, construction of simulation drainage basins, models and the invalidations.

Regional geomorphology, problem magnitude at world continental, sub-continental and local scales, arbitrary scale signification for the development of regional difference of (i) variation in rock structures, (ii) eperogenic, isostatic and eustatic movements, (iii) climate, (iv) climatic change and the legacy of the Pleistocene, Morphotectonic, morphometric and morpho-chronological classifications. Indian stratigraphy and regional geomorphology of India in general and Rajasthan in particular.

Techniques of geomorphic study :

Laboratory techniques : Aerial Photo-interpretation; types, size and quality of aerial photographs, scale and laps, over-laps crab, draft displacement, types of cameras, mosaics and stereoscopes.

Photo interpretation in geomorphology, geology, soil conservation and erosion, vegetation, hydrology engineering and agriculture.

Elementary photogrammetry; perspective, geometry of aerial photographs, radial line method; parallax, height and slope measurements, methods, of photogrammetric mapping of natural resources.

Analysis of mapping and presentation of data : Analysis of sediments of different landforms, determination of the slope and size of the sediment practice. Preparation of block and bar diagrams, histograms and wind rosest construction of longitudinal, simple superimposed, projected and composite profiles identification of rocks and soils, mapping and interpretation of geological land-forms hydrological, vegetation and land-use maps.

Applied geomorphology : The significance and relationship of endogenetic and exogenetic processes, dynamic relationship between climate, rocks, weathering soils, vegetation and forms, the relation between geomorphological and ecological sites, their uses as environmental indicators, application of geomorphic knowledge in (i) interpretation at air-photographs. (ii) Study of geology, hydrology, pedolo forestry and geography, (iii) rural and urban planning, (iv) civil engineering, (v) investigation of problem areas, landslides floods, ravine and gully erosion, the sand dunes, locating the positious of the buried channels and their impact on prospecting and distribution of soils, water resources, minirals and evaporiton, (vi) resource survey.

*Books Recommended :*

1. A.K. Lobeck; Geomorphology; Mc Graw Hill New York.
2. A.K. Thornbury; Geomorphology; Prentice Hall New York.
3. M.F. Thomas; Tropical Geomorphology; A study of Weathering and Landform Development in warm climate, Mc Millan New-Delhi, 1974.

4. A.N. Strahler; *Modern Physical Geography*, John Wiley and Sons, New York.
5. A Young; *Slopes*.
6. Ahmed E; *Coastal Geomorphology of India*, New Delhi.
7. Ramsey; *Folding and Fracturing of Rocks*.
8. Edward; *Geomorphology and Climate*.
9. King; *Techniques in Geomorphology*.
10. King; *Introduction to Marine Geology and Geomorphology*.
11. Gregory; *Drainage Basin Form and Process*.
12. Davidson; *Science for Physical Geographers*.
13. Gelis; *Models of Spatial Processes*.
14. C.A.M. King; *Glacial and Peri Glacial Processes*.
15. Arthur Holmes; *Physical Geology*.
16. Petti John; *Sedimentary Rocks*.
17. Seeval; *Atlas of Landforms*.
18. Platt; *Simple Geological Structures*.
19. W.M. Davis; *Geographical Essays*.
20. Johnston; *Multivariate Statistical Analysis in Geography*.

Paper VII(a) Urban Geography :

3 hrs. duration.

100 marks

Aims and scope of Urban Geography, Factors affecting the growth of towns during Neolithic period, Greek and Roman Period, Dark Ages, Medieval period, Renaissance period, Industrial Revolution, and Modern times, Chief characteristics of the towns of each period.

Trends of urbanisation in the world. Urbanisation in India since 1901 and its problems. Census of India, definitions of urban centres.

Chief characteristics of modern town, City Conurbation, Metropolis, and Megalopolis.

Spatial pattern and distribution of urban centres. Types of cities—Central places. Transport foci and Centres of specialised services.



Classification of cities based on functions.

Urban Rank-Size relationship.

The Basic and Non-Basic concept of urban economic functions and its application.

Urban hierarchy based on functions.

Urban Morphology, Unplanned and planned growth of towns. Urban plans, Morphology of Indian cities.

Functional structure of towns. Chief characteristics of C.B.D. Residential areas, Manufacturing areas and other functional areas. Theories and Models of urban structure.

Centrifugal and Centripetal forces in Urban Geography.

Development of suburbs, rural, urban fringe, satellite towns, ring towns. Sphere of urban influence (Umland) and its delimitation.

Principles of Town Planning. Preparation of a Master Plan, Study of Master Plan of Jaipur, Principles of Regional Planning.

*Books Recommended :*

1. Taylor G. : Urban Geography, (Munhuen and Co. London).
2. Abercrombie : Town and Country-Planning (Oxford University Press., London).
3. Dickinson R.E. : The West European City, (Routledge and Kegan Paul, London).
4. Cornish, V. : The Sociology of City Life.
5. Geddes, P. : Study in City Development.
6. Singh, R.L. : Banaras, A study in Urban Geography (Students Friends, Allahabad).

7. A.E. Smailes : The Geography of Towns. (Hutchinson, University Library London).
8. Dickinson, R.E. : City Region and Regionalism. (Routledge and Kegan Paul, London).
9. Mumford, L. : City Development (Socket Warburg, London).
10. Harold M. Mayer and C.F. Kohn. : Readings in Urban Geography, (Central Book Depot. Allahabad).
11. V.L.S. Prakash Rao : Towns of Mysore State. (Statistical Publishing House, Calcutta).
12. Shah Manzoor Alam : Hyderabad and Secundrabad Twin City : Studies in Urban Geography (Allied Publishers, Delhi).
13. R.L. Singh : Bangalore an Urban Survey, (National Geographical Society of India, B.H.U. Varnasi).
14. P.C. Malhotra : Survey of Bhopal City and Bairagarh. (Asia Publishing House Bombay).
15. N.V. Sovani : Urbanization and urban India (Asia Publishing House, Bombay).
16. V.K.R.V. Rao : Socio-Economic Survey of Greater Delhi. (Asia Publishing House, Bombay).
17. R.K. Mukerjee and Baljeet Singh : A District Town in Transition Socio-economic survey of Gorakhpur, (Asia Publishing House, Bombay).
18. B.R. Dhekney : Hubli city—A study in urban Economic life (Asia publishing House, Bombay).
19. Hudson F.S. : Geography of Settlement.

20. Johnson R.H. : Urban Geography
21. Ambedkar and : Town and Country Planning.
22. Madhok and Putnan : Geography of Urban Places.
23. Carter : The Study of Urban Geography.
24. Turner, R. : India's Urban Future, Oxford. University Press, Bombay, 1962.
25. Carter : The Study of Urban Geography, Edward Arnold, London, 1972.
26. Johnson J.H. : Urban Geography, Pergamon Press, London, 1972.
27. Northam, R.K. : Urban Geography; John Wiley and Sons N.Y. 1976.
28. Courne, L.S. : Internal Structure of the City, Oxford University Press N.Y., 1971.
29. Gibbs, J.P. : Urban Research Method, Von Nostrand Co., Inc., Toronto, 1961.

Paper VII (b) Climatology and Oceanography :

3 hrs. duration

100 marks

The processes of heating and cooling of earth's atmosphere, vertical and horizontal distribution of temperatures, layers of atmosphere temperature zones of earth surface winds and global circulation, cyclonic storms, air masses and weather fronts. Climatic classification, and climatic regimes, soil water and water balance. Thornthwait system and Koppen system of world climatic divisions.

Scope and importance of Oceanography, Submarine canyons, bottom relief of the oceans, ocean deposits, coral reefs and islands, temperature of the oceans, density of sea water, tides and tidal theories.

*Books Recommended :*

1. Kendrew W.G. : The climates of the continents, Oxford University Press New York.
2. Brooks C.E.P. : Climate in Everyday Life.
3. Critchfield H.J. : General Climatology.
4. Trewartha G. T. : Introduction to Weather and Climate.
5. Austin H. : Climatology.
6. Blair T.A. and Fite R.C. : Weather Elements, A Text book in Elementary Meteorology, Prentice Hall.
7. H. Lamdborn Dubis : Physical climatology Pre-Gray Printing Co. U.S.A.
8. Das, P.K. : Monsoon, National Book Trust
9. Patterson : Weather Analysis and Forecasting.
10. Sharma R.C. : Oceanography for Geographers, Chaitanya Publishers Allahabad.
11. Holmes Arthur : Physical Geology.
12. Steers J.A. : The Unstable Earth, Methuen and Co., London.
13. Cotter : Oceanography.
14. Loke, P. : Physicol Geeugraphy
15. Strahler A.N. : Earth Sciences Harper and Row Publishers, New York.
16. Strahler A.N. : Modern Physical Geography, John Wiley and Sons, New York.

## Paper VII(c) Applied Geography :

3 hrs. duration

100 marks

Principles and Methods, Nature and Scope.

Application of geographical methods of survey and analysis to contempoary, physical, socio economic and political problems with special reference to problems of Agriculture, Industries, Population and Settlement.

Geographical application of distinctive economic principles including the evolution of geographical mapping of production.

Specialisation of areas.

Land classification, agricultural land use in India and other countries.

Principles of urban land use planning, Delimitation of urban fields. Functional zoning of urban land, Problems of expansion of urban centres.

Means of communication and their relation to towns.

*Books Recommended :*

- |                    |  |
|--------------------|--|
| 1. Stamp, L.D.     | : Applied Geography.                       |
| 2. Freeman, T.W.   | : Geography and Planning.                  |
| 3. Stamp, L.D.     | : The Land of Britain Its Use and Misuses. |
| 4. E.W. Zimmerman  | : World Resources and Industries.          |
| 5. Graham          | : Natural Principles of Land Use.          |
| 6. Stamp, L.D.     | : History of Land Use in Arid Regions.     |
| 7. Stapledon, R.G. | : The Land of Tomorrow.                    |

*Paper VII(d) Pedology :*

3 hrs. duration

100 marks

Modern pedological principle underlying soil formations; soil genesis-factors influencing it; Characterisation and classification of soil groups of the world and their distribution: Classification and distribution of Indian soils; Methods of soil survey, soil analysis, soil mapping, soil profiles; their description analysis and interpretation of results; Soil erosion and soil conservation with special reference to India.

Physical properties of soils; soil structure, texture, soil genesis and moisture, cultural practices

affecting soil structure; manures and fertilisers; in relation to soils with special reference to India, Soil survey for land capability and land utilisation.

### *Books Recommended*

- |   |   |
|---|---|
| Jeffe, J.S.   | : Pedology.   |
| Comber  | : Scientific Study of Soils.<br>Soil Survey Staff Bureau. |
| U.S. Deptt. of Agriculture  | : Soil Survey Manual.                                     |
| Whyte and Jacks   | : The Rape of the Earth                                   |
| Bavar, L.D.   | : Soil Physics.   |
| Wright  | : Soil Analysis   |
| Sygmont   | : Principles of Soil Science.                             |
| Robinson, W.C.  | : Soils--Their Origin, Classifications and Constitution." |
| Ray-Choudhary   | : Soils of India.   |
| Russel, E.J.  | : The World of Soil.                                      |
| Agrawal, R.R.   | : Soil Fertility in India.                                |
| De, S.K.  | : Methods of Soil Analysis.                               |
| Soil-Geographical Zoning of the U.S.S.R.<br>(Published by the Academy Sciences of the U.S.S.R. Moscow). |   |
| Volebuey, V.R.  | : Ecology of Soils.                                       |
| Clarke  | : The Study of Soil in the Field.                         |
| Bunting, B.T.   | : The Geography of Soil.                                  |

Proceeding of the Symposium on Fertility of Indian Soil Bulletin No. 26 of 1964, National Institute of Sciences of India. New Delhi.

Paper VII(e) Medical Geography :  
(Syllabus to be recommended)

Paper VIII(a) Political Geography :  
3 hrs. duration 100 marks  
Definition, Scope and Development of Political Geography.  
(a) Definition and scope of political geography :  
its relation with other Social Science.

- (b) Geopolitics and German School of Thought.
- (c) Development of Political Geography—Concepts of Mackinder, Spykman, Meinig, Hooson, De Seversky. World's geostrategic regions.

#### Methodology :

- (a) The functional approach in Political Geography by Hartshorne.
- (b) The Unified Field Theory of Political Geography by S.B. Jones.
- (c) A Systems Analysis model.

#### State Temporal and Spatial Attributes, Resources:

- (a) The emergence and structuring of the state : Unitary and federal States.
- (b) The Elements of the State : Territory, Population, Organization and Power.
- (c) The Heart of the State : Core Areas.
- (d) The Focus : Capital City.

#### Frontiers and Boundaries : Concepts and Classification :

- (a) Frontiers, Boundaries and Buffer Zones.
- (b) Classification of Boundaries, changing concept.
- (c) The concept of Territorial Sea and Maritime Boundaries.
- (d) Landlocked States : Problem of Access.

#### Growth of Nations and Disintegration of Empires :

- (a) Unitary and Federal States.
- (b) The Dying Colonialism and Resurgent Nationalism.
- (c) Supranationalism : From States to Blocks.

#### Strategy and International Politics :

- (a) Study of U.S.S.R. and U.S.A. as Super Powers.
- (b) Emergence of Third World Block.
- (c) Politico-geographical study of India.

Extending dimensions of Political Geography :

- (a) The politics and transportation.
- (b) The geography of foreign aid and economic development.
- (c) The politico-geographical implications of space research.

The function and Methods of Electoral Geography :

- (a) Electoral Studies in Political Geography.
- (b) Conceptual Model of the Voting Decision.
- (c) Operationalisation of Conceptual Model.
- (d) Garrymendinger in relation to India.

*Books Recommended :*

1. Alexander, L.M. : World Political Patterns (Johan Murray and Co., London).
2. Boggs, S.W. : International Boundaries (Columbia University Press, New York).
3. Bowman, I. : The New World-Problems in Political Geography, (World Co., Yonkers. on Hudson).
4. Golby, C.C. : The Geographic Aspect of International Relations (University of Chicago Press, Chicago).
5. East, W.G. and Moodie A.E. : The Changing World (George G. Harrap and Co., London).
6. East, W.G. and Spate, O.H.K. : The Changing Map of Aisa, (Methuen and Co. London).
7. Fringreive, J. : Geography and World Power (University of London Press, London).
8. Fawcet, C.B. : Frontiers, Study in Political Geography (Oxford University Press, Oxford).
9. Fittzgerald W. : New Europe (Methuen and Co.)
10. Fizgiddon, R.H. : Global Politics (University of California Press, Parkaley).



11. Goblet, Y.M. : Political Geography and World Map, (George Phillips and Co., London).
12. Horradin, J.F. : An Outline of Political Geography (Alferd A. Knob, New York).
13. Huntington, E. : World Power and Evolution (Yale University Press, New Haven).
14. Moodie, A.E. : Geography Behind Politics (Hutchinson's University Library, London).
15. Percy, C.E. etal : World Political Geography (Thomas Y. Crowell Co, New York).
16. Spengler, O. : The Decline of the West (Alfred A Knof and Co, New York).
17. Valkenburg, S.V. and Sttz, C.L. : Elements of Political Geography, Second Edition (Eastern Economy, Edition, Prentice Hall and Co. Ltd).
18. Stranz, R.H. : Geopolitics—The Struggle for Space and Power (G.P. Pitman's and Sons. New York).
19. Stranz, R.H. and Possony : Internationaal Relations (Mc. Graw Hill Book Co. New York)
20. Stykman. N.J. : The Geography of Place, (Harcour Brace, New York ).
21. Wegert, A.W. and others : Principles of Political Geography (Appleton-Century-Crft, Inc., New York).
22. Weigert, H.W. Steff- : New Compass of the World, ansov, V, and Harr- Macmillan and Co., New ison, R,E, York.
23. Whittlesey, D. : The Earth and State (Henry Holt and Co., New York).
24. W.A. Douglas-Jack- : Politics and Geographic Re- son lationship (Prentice Hall, New York).
25. S.B. Cohen : Geography and Politics, Divid- ed World. (Methuen and Co., London).

26. Crone : Background to Political Geography.
27. H. Jeo Blij : Systematic Political Geography (John Willey and Sons, New York).
28. Satish Chand Tiwari : Political Geography

Paper VIII(b) Anthropogeography :

3 hrs. duration

100 marks

Environment and antiquity of man : Paleolithic and Mesolithic man and their cultures; Pleistocene environment.

Cradle of mankind; Fossil men; Pithecanthropus Erectus (ape man of Java), Sinanthropus (Chinaman), Eoanthropus (Piltdownmen) Palaeo-  
 ontropus (Hedelberg); Study of the development of primitive tools, implements and weapons.

Cultural chronology, Palaeolithic environments and culture; Extinct races-Neanderthal, Grimaldi Cromagnon; Modern Palaeolithic tribes-Tasmanians, Australians, Bushmen and Eskimos.

Neolithic men and their culture; Domestication of animals Pastoralism; Origin of Agriculture; Later Civilisation Greek, Roman, Egyptian, Chinese, Inca and Maya civilisations.

Men and cultures of Prehistoric India; Peopling of Prehistoric India, Paleolithic, Neolithic and Bronze Age in India.

Environment and ethnography. Concept of Race; Chief Racial types and their geographical distribution and main biological characters.

Races of India : Migration of Races.

Primitive tribes of India; Nagas, Tharus, Khasis, Korwas Gonds, Santhals, Urali, Mundas and Bhils.

*Books Recommended ;*

1. Kroeber

: Anthropology

- |                           |  |
|---------------------------|--|
| 2. Majumdar               | : Races and Cultures of India.                             |
| 3. Majumdar               | : Fortunes of Primitive Tribes.                            |
| 4. Haddon                 | : Races of Man,  |
| 5. Haddon                 | : Wandering of peoples.                                    |
| 6. Sollas                 | : Ancient Hunters.   |
| 7. Taylor                 | : Environment, Race and Migration.                         |
| 8. Keane                  | : Man-Past and Present.                                    |
| 9. Keith                  | : Antiquity of Man, Vols, I and II.                        |
| 10. De Morgan             | : Prehistoric Man  |
| 11. Forde, G.D.           | : Habitat, Economy and Society                             |
| 12. Risley                | : Peoples of India   |
| 13. Census of India, 1931 | : Vol. I, Part II-Ethnographical Racial Elements in India. |
| 14. Mackenzie             | : Footprints of Early Man.                                 |
| 15. Elvin V.              | : The Muria and their Goatul.                              |
| 16. Grigaon, W.V.         | : Hill Marias of Baster.                                   |
| 17. Srivastava, K.S.      | : The Tharus.  |
| 18. Pigget                | : Prehistoric India.                                       |
| 19. Durant, W.            | : The story of Civilisation.                               |
| 20. Smith, K.B.           | : The Paths of Culture.                                    |
| 21. Service, K.R.         | : Profiles in Ethnology.                                   |

Paper VIII(c) Bio-geography :

3 hrs. duration

100 marks

Meaning and scope of Bio-Geography, History of Zoo-geography and Plant Geography.

Plant response to environment, The habitat factors, climate factors, physiological responses. Basis of classification : Taxonomic and Ecological classifications of plants.

Barriers to distribution and means of dispersal.

Types of plant communities in general, factors controlling forest distribution. Characteristics of Equatorial and Tropical forests and grassland—their distribution.

Climatic changes and their effect on the plant cover-condition of existence for animals. The effect of environmental selection on animal distribution.

Taxonomic classification of animals. Animal classification according to the general characteristics of environment.

Barriers to distribution and means of dispersal. The effect of geographic isolation.

Distribution of animals; The Zoo-Geographical regions.

Aquatic environment and life; marine and fresh water fauna. Distribution of world fisheries.

Bio-Geography : Its economic bearing, Conservation of wild life, Conservation of forests, soil erosion, soil conservation, development of fisheries in India.

*Books Recommended :*

- |                      |  |
|----------------------|--|
| 1. Newbegin          | : Plant and Animal Geography.  |
| 2. Alar Schmid       | : Economical Animal Geography.   |
| 3. Cline             | : Foundation of Plant Geography.   |
| 4. G. Ponal          | : The Geography of Flowering Plants.   |
| 5. Newbegin          | : Animal Geography.  |
| 6. Darlington        | : Zoo-geography.   |
| 7. Schimper          | : Plant Geography.   |
| 8. Morris J. Solomon | : Better Plant Utilisation in India, A blue print of Action (I.I.S. Calcutta).                       |
| 9. S.L. Hora         | : Fundamental Conception of Zoogeography. (N.G.S.I., Banaras).                                       |
| 10. S.L. Hora        | : Torrential Fishes and the Significance of their distribution in geographical studies NGSI Banaras. |

11. M.L. Roonwall : Geographical and Geological Causes of the Migration of Animals (NGSI, Banaras).

Paper VIII(d) Regional Planning

3 hrs. duration

100 marks

Terms and Definitions :

- (a) Regional Planning : Term, Task, Scope and Objective.
- (b) Specific problems : task and scope of regional planning in developing countries.

Principles and Determinants of Regional Planning :

- (a) Significance of the ecological potential of a country's region for regional planning.
- (b) Importance of the density, distribution and development of population for regional planning.
- (a) Significance of the term 'Integration' (Political, Economic, Social and Spatial) for regional planning.
- (b) Importance of the political system for regional planning.
- (c) Significance of the factor 'adaptation of developments of different social classes of the population for regional planning.

Methods of Regional Planning :

- (a) Factor Analysis.
- (b) Comparative Cost-analysis.
- (c) Industrial complex-analysis.
- (d) Shift analysis.

Paper VIII(e) Meteorology :

3 hrs. duration

100 marks

The Atmosphere.

Chemical composition, vertical structure, temperature distribution, various spheres.

**Pressure :**

Definition, Law of hydrostatic equilibrium. Variation of pressure. Laplace formula Measurements of pressures, pressure system and isobars.

**Temperature :**

Heat budget of atmosphere, Radiation, Measurement, Various Laps rate, Inversion, Gas equation. Albedo. Isothermal and adiabatic processes in the atmosphere Greenhouse effect.

**Humidity :**

Vapour pressure. humidity quantities, The Bulb and Dew point. Density of air. Stability and instability Thermodynamic diagrams, Virtual and potential temperature Formafog.

**Clouds and Precipitation :**

Classification of clouds and their description. Formation of clouds, Condensation, formation of rain, Bergerons, and capture theories. Convective frontal and orographic precipitation, Snow, Hail and Frost, Thunderstorm and types.

**Motion of Air.**

Buys Ballotlaw, Coriolis force, Geostrophic and gradient winds, effect of friction, Seas and land breeze. Orographic winds, Thermal wind, Gust and squall, Variation of wind with height, Jet-Stream.

**Upper air observations.**

History, theory of Pilog balloon observations, Radiosound, uses of fradar and Stellties, upper observations in India.

**Synoptic Meteorology :****Structure of Pressure Systems :**

Weather conditions associated with different types of pressure systems.

General idea of air masses and fronts. Frontogenesis and Frontiolysis, World cirulation of air and geographical distribution of fronts.

Inter-tropical convergent zones. Tropical revolving storms Development and movement of Simple pressure systems and fronts. Morgale formula.

Effects of topographical features of Development of wether.

Monsoon : Monsoon Climatology and genesis of the Indian summer monsoon. The enervetics of the monsoon and physics of monsoon rain. Distribution of rainfall in monsoon and associated pressure systems, Lon grange forecasts of monsoon rain. Consideration of Snalogues charge.

Climatology :

Climatic classification of world—Koppens classification precipitation and temperature criteria, Thornthwaite modification.

Seasons in India with special reference to western disturbance, Northwestern monsoon depressions and dust storms Physical climatology.

Controls of Climate, Solar constant, Disposition of insolation in the atmosphere.

Microclimatology.

*Practical :*

1. Uses and up-keep of meteorological instruments. (a) Surface (b) Upper air
2. Codes and symbols.
3. Plotting of Surface and Upper air charts.
4. Drawing of isobars and stream lines.
5. Elements of weather forecasting.
6. Preparation of climatological table.

*Books Recommended :*

Physical Meteorology :

1. Blair Thomas A. and : A text in Elementary Meteorology. New York Prentice Hall.  
Robert C. Fite,  
"Weather Elements Hall.

2. S.L. Hcss, : Introduction to Theoretical Meteorology New York Holt \$8. 50
  3. G.F. Taylor : Elemenatry Meteorology,
  4. S. Pettersson \$7. 50 : Introduction of Meteorology.
  5. H.R. Byer, : General Meteorology 3rd Edition New York Mc Grow Hill.
- Synoptic Metèorology :
6. by C.F. Brooks : Why the Weather
  7. Lehr. Paul E.R. Will : Airmasses, Clouds, Rainfall, Burnentt and Herbert Storms, Weather-Maps, S. Lin. Weather climate,
  8. Elementary : Forecasting by Her Majesty Stationery Publications.
  9. Dr. P.R. Das, : Monsoon National Book Trust Publications.
  10. Riehi, Herbst : Tropical Meteorology, Mc Graw Hill, N.Y.
- Climatology :
11. C.E.P. Brooks. : Climate in Everyday life,
  12. Crltchfield H.J. : General Climatology.
  13. H. Lamdsbern Dubis, : Physical Climotology, Pa-Gray Printing Co. U.S.A.
  14. Rudolf Geiger, : The Climate Near the Ground, Cambridge University Press.
  15. W.G. Kendrew. : The Climates of the Continents, New York Oxford University Press.
  16. Climatology & India : FMU. Pep. No I-0122 issued Parts I and II Dy. Director Gen. (Forestry), Poona-5.
  17. Mason Basil. : Clouds, Rain, and Rain making,
  18. Spar, Jarome : Earth, Sea and Air,
  19. Johson, John : Physical Meteorolgy C. New York, Willey.
  20. S. Patterson. : Weather-Analysis and Forecasting.



21. Geneva, Switzerland : M.W.O. International Cloud  
1—85. Atlas-Album by Abridged  
Allas,
22. Meteorological office, : Meteorological Clossarry  
London. issued.
23. : Climatic Change Evidence  
Causes and Effect.
24. Glem T. Trewarth : Introduction to weather and  
climate by
25. Hawribt and Austen : Climatology

### Paper VIII(i) Research Methodology.

3 hrs. duration

100 marks

Problems of geographical research. Identification of problems of regional and systematic geography, sources and nature of data to be used, Hypotheses and Models, Formulation of research schemes.

Preparation of research projects and writing of reports. Preparation of field reports, spatial data, classifications and sampling problems. Need for sampling, types of sampling, sample size and sampling area.

Selected techniques of spatial analysis, methods of measuring concentration and dispersal of economic activities. Nearest Neighbour analysis, Regional interaction analysis, gravity potential, inter-regional flow-analysis, Methods of delimiting regions, resource regions, economic industrial regions, planning regions, agricultural regions.

Regional population analysis, population projection, Population migration projections; Network analysis, Techniques of urban analysis with reference to land use, population and hinterland relationships-delimiting sphere of city influence. Determining of core and marginal areas.

Techniques of Map Analysis, Morphometric analysis Thalegaltimetric frequency graphs,

Drainage basin analysis, Slope analysis, Analysis of bio-geo-chemical cycles, Intergrated Area Development planning.

*Books Recommended :*

1. Worthing ten and Gant : techniques of Map Analysis.
2. King, C.A.M. : Teachniques of Geomorphology.
3. Hoyle, B.S. (Ed.) Spatial Aspects of Development.
4. Misra, R.P. (Ed.) Regional Planning, Concepts, Techniques, Policies and Case Studies, 2969.
5. Isard and Cemberl- and : National Economic Planning, 1961.
6. Mukerjee, R.K. : Planning the Conutryside;
7. Stamp, L.D. : Applied Geography.
8. Stamp, L.D. : The land of Britain : Its use and Misuse.
9. Stamp, L.D. : The Geography of Life and Death.
10. Stamp, L.D. : Our Developing World.
11. Freeman : Geography and Planning
12. Prakasa Rao : Regional Planning
13. Prakasa Rao : Towns of Mysore.
14. Smailes : Geography of Towns.
15. Abercrombie : Town and Country Planning
16. Chapin, F.S. : Urban Land Use Planning.
17. Morril : Migration and Spread and Growth of Urban Settlement.
18. Chisholm : Rural Settlement and Rural Land use.
19. Shafi, M. : Land Utilisation in Eastern Uttar Pradesh.
20. Graham, F.H. : Natural Principles of Land-Use.
21. Hagget Peter : : Geography A modern Synthesis
22. Hagget and Chorley : Models in Geography

## DISSERTATION

100 marks

Dissertation on any Geographical Problem.

*N.B.* : Disseration can be offered in the Final Year Examination by a candidate in lieu of paper VI or VII or VIII. It should be related to one of the Theory papers offered by him.

*Note* : The candidates offering this paper will be required to submit dissertation three weeks before the beginning of Theory Examination. It will be examined by a board of two examiners who shall also conduct the Viva-Voce of the candidates at the centre of theory examination. Three copies of the thesis will be submitted to the University, out of which one copy will be returned to the Department/College and one to the Supervisor.

The dissertation should exclusively be based on field work and statistical analysis as far as possible and prepared under the guidance of a post-graduate teacher of five year standing.

The volume of the dissertation will not exceed 100 pages.

## PRACTICALS

## Field Survey and Laboratory Work and Survey Camp

1. Laboratory work paper of 4-hours duration	30 Marks
2. Record of laboratory work and viva voce (10+5)	15 Marks
3. Surveying and laboratory work and viva-voce 3 hrs. (25+5)	30 marks
4. Camp work and viva (20+5)	25 marks
	<hr/> 100 marks <hr/>

The Art of Surveying, Hisotry of Surveying, scope, utility and problems, Classification of Surveying.

Methods and techniques of representation of relief.

- (a) Methods and techniques of depicting relief.
- (b) Profile, gradients and calculation of slopes
- (c) Contours and intervisibility.
- (d) Block diagrams, field sketching serial profile hypsographic curves, altimetric frequency graphs.

#### Interpretation of Topographical Maps :—

A brief history of topographical maps of the world with special reference to India and their interpretation, detailed study of such toposheets which depict typical geomorphology and cultural landscapes.

Air photo interpretational exercises on the the determination of height of plan, parallax, number of runs and number of photographs, knowledge of stereoscopic vision. mosaics, types of cameras, emulsions and stereoscopes, Interpretation and identification of cultural and physical features on aerial photographs. case of photo interpretation of land use and settlements in the field.

#### Field Surveying and Camp Work.

Theodolite : its parts and their function, use of theodolite, theodolite-traverse and traverse computation, independent coordinates.

Use and application of planetable and clinometer in small area surveys. Traverse planetable. Resectioning : Two and Three-Point Problems. Practical contouring by clinometer.

Levelling : Terms, Types and Principles of levelling, Classification of levelling. Profile, Precise and other types of levelling. Use of Dumpy level, Practical contouring. Cross sectioning, use and application of Abney Level.

Camp work : A topographical survey of a settlement of about 500 acres of land will be done

by organising a 'camp far away from the centre of the institution and maps and reports of the same will be prepared.

*Books Recommended :*

1. Kanetrar. T.P. and Kulkarni, S.V. : Surveying and Levelling Vol. I (A.V. Gria Prakash, Poona).
2. Deshpande, R.S. : A Text Book of Surveying and Levelling. (United Book Corporation, Poona).
3. James Clending : Principles and use of surveying. (Blackie and sons Ltd., Glasgow).
4. B.C. Punmia : Surveying and Feild Work Vol. I (Standard Book Dept., Delhi).

*Books Reference:*

5. Breed, C.B. and Hosmer, G.L. : The Principles of Surveying Vol. I and II (New York).
6. Davis, R.E. and Foot, F.S. : Surveying Theory and Practice (Mc Graw Hill book Co, New York).
7. T.R. Tracy : Surveying theory and Practice (John Willey and Sons. Inc., New York).
8. Thrilfall, H.S.A. Text Book of Surveying and Levelling (Charles Grafflin, London).
9. Williamson : Surveying and field Work. (Constable).
10. Roorkee Engineering College : Mannual of Surveying.
11. N.C. Gautam : Urban Landuse Studies throught Air-photo interpretation Techniques; Pink Publishing House Mathura.

*Note :—*Marks of Camp-work for Non-Collegiate candidates will be allotted to Record work.

## APPENDIX—II

(*Ref. Res. No. 4 (V) of the minutes*).

**M. Phil in Geography**

The M. Phil. Examination for regular students :

**Core Papers :**

Paper I—Geographical Analysis and Research Methodology :  
Marks 100

Problems of geographical research. Identification of problems of regional and systematic geography. Formulation of research schemes and research projects.

Collection, processing, analysis and utilization of field data.

Methods of measuring concentration and dispersal of socio-economic activities, inter-regional flows. Methods of delimiting regions with particular reference to resource and industrial regions.

**Integrated area Development Planning.**

Descriptive statistics, Theory of probability. Theory of sampling, Correlation, Simple linear regression analysis, Spatial distributions and inter-actions, Measurements of disparities, Measures of inequalities, Combinational analysis, Matrices, Multivariate analysis, Logical models, Theory building.

Two core papers from any of the prescribed groups. The core papers should be the same as the theory papers of the M.A./M.Sc. course in geography but the standard should be higher than that of M.A. The latest developments in the field to which the paper relates should be included and the easier or elementary topics should be deleted.

Each paper of 100 marks.

The core papers in the various fields should be developed gradually according to the staff available. Out of the two papers one should be on advanced study in the field. In each of the papers 25% contents should be related to Cartographic analysis and 25% to statistical analysis and the rest 50% should be theory of the field.

In work load 50% of the periods should be devoted to the teaching of theory, 25% to cartographical work and 25% to statistical work.

To begin with the Agricultural Geography may be taken as the field for M.Phil. courses in the initial stages.

It would have the following two core papers :

Paper I Physical Basis of Agricultural Geography,

Paper II Advanced Agricultural Geography.

Paper I Will have the following contents :

The Ecology of Agricultural Systems, Environmental basis of Indian Agriculture, Agro-climatology, Pedology, Biogeography.

Paper II Will have the following contents :

Economic Geography of Agriculture, Analysis of agricultural structure of regional planning, Relationship between farm management analysis and Regional Economics, Agricultural marketing, transportation of agricultural commodities and agro industries. Indian village.

*Note :* The contents of these papers may be modified by the teacher concerned in consultation with the senior most teacher in the University Department in the light of new literature being available.

**Dessertation :** (equal to 100 marks).

The student will write a dissertation on any topic related to his theory papers covering about 125 pages. It should be submitted within six months of the theory papers.

## APPENDIX III

(Ref. Res. No. 11 of the minutes)

## III Semester 1979—80

IX—Research Methodology

X—Any one of the Following :—

- (a) Elements of Agricultural Geography
- (b) Theory of Industrial Geography
- (c) Regional Planning in Developed Countries

XI—Any one of the following :—

- (a) Urban Geography
- (b) Political Geography-concepts and methods
- (c) Phytogeography
- ((d) Advanced Geomorphology I

XII—Any one of the following :—

- (a) Meteorology I
- (b) Pedology
- (c) Resource Geography
- (d) Oceanography
- (e) Anthropogeography

**Practicals-Lab work :**

Courses recommended books and breakup of marks be consulted from the syllabus of III and IV semester edition 1978.

**Geog. IV Semester, 1980**

XIII—Advanced Regional Geography of Rajasthan and Adjacent countries of India.

XIV—Any one of the following :—

- (a) Applied Agricultural Geography
- (b) Geography of Manufacturing.
- (c) Regional Planning in Developing Countries.

XV—Any one of the following :—

- (a) Urban Morphology
- (b) Applied Political Geography
- (c) Zoogeography
- (d) Advanced Geomorphology II



XVI—Any one of the following :—

- (a) Meteorology II
- (b) Applied Geography
- (c) Medical Geography
- (d) Human Ecology
- (e) Transport Geography

*Note* :—Dissertation can be offered in lieu of any one of the papers e.g. papers, XIII, XIV, XV, XVI.

*Practical* :

Field Survey and Camp work.

( See IV Semester Syllabus 1978 Edition )

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चित्रकला पाठ्यक्रम मण्डल की बैठक दिनांक 29/30 अक्टूबर, 1979 को नव्याह्न 12.00 बजे विश्वविद्यालय कार्यालय में सम्पन्न हुई।

उपस्थित :

1. श्री बी. एल. शर्मा (संयोजक)
2. श्री आर. ए. जैसवाल
3. श्री बी. एस. शर्मा
4. श्री एन. एल. श्रीमनि
5. श्री सी. एस. मेहता

1. विश्वविद्यालय एक्ट के अधिनियम की धारा 34 (4)(iv) के अन्तर्गत श्री आर. ए. जैसवाल, व्याख्याता चित्रकला, दयानन्द कालेज, अजमेर को संयोजक के अतिरिक्त एक सदस्य परीक्षक चयन समिति के लिये सर्व-सम्मति से निर्वाचित किया।

2. विश्वविद्यालय कालेजों/सम्बद्ध महाविद्यालयों/अन्य विश्वविद्यालयों से प्राप्त परीक्षकों के रैनल का अवलोकन कर परीक्षकों की योग्यता एवं अनुभव के आधार पर S. (25)(2)(a) के अन्तर्गत सुधार किया।

3. परीक्षक रिपोर्ट एवं प्रश्न पत्रों के सम्बन्ध में मण्डल ने अवलोकन कर निर्णय लिया कि परीक्षकों की रिपोर्ट मुद्रित होने के पश्चात् सभी सम्बन्धित विभागों में भेजी जानी चाहिये।

4. निम्नलिखित परीक्षाओं के पाठ्यक्रम एवं पाठ्य पुस्तकें निम्नानुसार निर्धारित की :-

(i) प्री-यूनिवर्सिटी परीक्षा—1982 अपरिवर्तनीय

(ii) स्नातक परीक्षाएँ—1982

(अ) प्रथम वर्ष परीक्षा, 1982

निम्नलिखित मान्यताएँ स्वीकृत की गई :-

1. प्रथम प्रश्न पत्र (थ्योरी)

फण्डामेंटल्स ऑफ बिजुअल आर्ट्स

समय अधिकतम अंक न्यूनतम अंक

3 घंटे

30

11

## 2. द्वितीय प्रश्न पत्र (रचनात्मक)

समय-6 घंटे

(i) स्टेडी फ़्रोम आवर्जैक्ट्स	30	11
(ii) क्रिएटिव रेंडरिंग	20	7
(iii) सबमिशन आफ वर्क	20	7

(पाठ्यक्रम में कोई परिवर्तन नहीं)

## (ब) द्वितीय वर्ष परीक्षा 1982

(i) प्रथम प्रश्न पत्र—कोई परिवर्तन नहीं

(ii) द्वितीय प्रश्न पत्र का शीर्षक

लाइफ स्टेडी विदक्रिएटिव ड्राइंग कर लिया जावे।

समय—5 घंटे

(चार घंटे लाइफ स्टेडी के लिये तथा 1 घंटा क्रिएटिव ड्राइंग पार्ट 'बी' के लिये)

(पोस्टर कलर या वाटर कलर या पेन्सिल या क्रेयोन कोई भी मीडियम)

## (स) तृतीय वर्ष परीक्षा 1982—अपरिवर्तनीय

(iii) आनर्स परीक्षायें—1982

(ये परिवर्तन—बी.ए. 1981 के साथ ही होने चाहियें।

बी.ए. पास कोर्स '81 के अनुसार ही रहेगा)

अंको का विभाजन निम्न प्रकार रहेगा।

ध्योरी पेपर—I—	अ. अंक	न्यूनतम
फण्डामेंटल आफ विज्युल आर्ट्स—	50	18
पेपर II (प्रेक्टिकल)		
स्टिल लाइफ A	40	100
क्रिएटिव रेंडरिंग B	60	
सबमिशन वर्क	50	18

बी. ए. आनर्स पार्ट—I—परिवर्तित (B.A.) प्रथम वर्ष के नये पाठ्यक्रम के अनुसार—

## (iv) स्नातकोत्तर परीक्षायें—

(अ) प्रीवियस परीक्षा 1982	} Appendix-I
(ग) फाइनल परीक्षा 1983	

मण्डल ने एम. ए. परीक्षाओं के विषय में निम्नलिखित निर्णय लिये :

इन्टरनल एक्जामिनर प्रत्येक पेपर का हैड आफ दी डिपार्टमेंट रहेगा और सारे प्रैक्टिकल की परीक्षाएँ ऐक्सटर्नल की उपस्थिति में होगी। कम्पोजीशन के लिए परीक्षक पेपर सैट करके भेजेगा और केन्द्र पर अन्तिम दिन आकर मूल्यांकन करेगा। पोर्ट्रेट और लाईफ स्टेडी में वाटर कलर या ऑयल कलर की एन्ड्रिकता रहेगी।

सदमिशन ऑफ वर्क में (एन. ए. फाइनल में)

10 प्लेट्स आफ क्रिएटिव वर्क

एन. ए. फाइनल में सदमिशन वर्क के अंक 80 के स्थान पर 100 अंक हो जायेंगे वेप सभी प्रैक्टिकल पेपर्स 100 अंक के कर दिये गये और थ्योरी के सारे पेपर्स के अविकतम अंक 75 किये गये।

प्रैक्टिकल और थ्योरी के पीरियड्स को समान संख्या में गिना जावे।

5. एकेडेमिक कौंसिल के निश्चय संख्या 4 ए (ii) दिनांक 15/16 मई, 1979 कि पाठ्यक्रम का अनुवाद हिन्दी लिपि में अंग्रेजी के साथ साथ छपा जावे।

मण्डल ने श्री आर. ए. जैसवाल, दयानन्द कालेज, अजमेर को समस्त पाठ्यक्रमों को हिन्दी में रूपान्तर करने के लिये दिया। श्री जैसवाल एक माह में पाठ्यक्रम की हिन्दी करके विश्वविद्यालय कार्यालय में भेज देंगे।

6. एकेडेमिक कौंसिल के निश्चय संख्या 10 दिनांक 1 जून, 1979 एवं सिण्डिकेट के प्रस्ताव संख्या 3 दिनांक 16 जून, 1979 के अनुसार स्नातकीय स्तर के पाठ्यक्रमों की इकायां समाप्त कर मण्डल ने 1981 की परीक्षाओं के लिए 1979 संस्करण पाठ्यक्रम की पाण्डुलिपि को संशोधित कर मुद्रण हेतु तैयार किया।

7. एकेडेमिक कौंसिल के निश्चय संख्या 11 दिनांक 1 जून 1979 एवं सिण्डिकेट के निश्चय संख्या 2 दिनांक 16 जून, 1979 जिसमें तनसत्र परीक्षाओं के समापन से वार्षिक प्रणाली के स्नातकोत्तर पाठ्यक्रम में 1981 की परीक्षाओं के लिए संशोधित पाठ्यक्रम मण्डल तैयार करें।

पाठ्यक्रम मण्डल ने स्नातकोत्तर 1979 संस्करण पाठ्यक्रम पाण्डुलिपि (जो कि एन.ए. प्रिवियस 80 एवं 81 एवं फाइनल की 1981 एवं 1982 की परीक्षा के लिये संशोधित कर मुद्रण हेतु निर्धारित है) को तैयार किया (परिशिष्ट I)।

8. एकेडेमिक काँसिल के निश्चय संख्या 14 दिनांक 11 मार्च, 1979 के अनुसार पत्राचार अध्ययन संस्थान के निदेशक के पत्र संख्या D-3/631 दिनांक 24 दिसम्बर, 1978 जिसमें पत्राचार द्वारा स्नातकोत्तर की फाइनल कक्षाओं में मौखिक परीक्षा स्वीकार की है तथा अन्य पाठ्यक्रम मण्डलों को भी यह प्रस्ताव तदनुसार भेजा गया है।

मण्डल ने निश्चय किया कि उक्त प्रस्ताव उनके पाठ्यक्रम से सम्बन्ध नहीं रखता है।

9. एकेडेमिक काँसिल के निश्चय संख्या 10 (i) दिनांक 11 मार्च 1979 के अनुसार डा० सत्येन्द्र चतुर्वेदी के पत्र दिनांक 13 दिसम्बर 1978 में स्नातकोत्तर हिन्दी विषय डिजिटेशन में मौखिक परीक्षा भी लागू होवे तथा अन्य पाठ्यक्रम मण्डलों को भी विचारार्थ यह प्रस्ताव रखा जावे।

मण्डल ने उक्त प्रस्ताव को विचार कर निश्चय किया कि यह प्रस्ताव ड्राइंग विषय पर लागू नहीं होता है।

10. पाठ्यक्रम मण्डल ने सर्वसम्मति से निश्चय किया कि :—

- (a) हर विभाग में विभाग को व्यवस्थित रूप से चलाने के लिये एक चतुर्थ श्रेणी कर्मचारी, तथा एक स्टूडियो असिस्टेंट अनिवार्य रूप से बांछित है, जो पहले से स्वीकृत होने पर भी व्यवस्थित नहीं किया गया है। सभी विश्वविद्यालय से मान्य महाविद्यालयों में 'रजिस्ट्रार' सम्बन्धित अधिकारियों को पूर्ति कराने के निदेश दें तथा बी. ए और एम. ए. कक्षाओं के रचनात्मक प्रश्न पत्रों में जहां 'मॉडल' की आवश्यकता होती है वह महाविद्यालय द्वारा उपलब्ध कराया जाना चाहिए। इसकी अनिवार्यता को देखते हुए इसे 'एफिलियेशन' की शर्तों में शामिल किया जाना चाहिए। 'मॉडल' व्यय होने वाली राशि विश्व-विद्यालय द्वारा वार्षिक बजट में सम्मिलित रहनी चाहिए।
- एम. ए. फाइनल में एक अतिरिक्त प्रश्न पत्र और जोड़ा गया।
- (b) 'ग्रीफ हिस्ट्री ऑफ ईस्टर्न एण्ड वेस्टर्न एस्थेटिक्स'

अथवा

'मास्टर आर्टिस्ट्स ऑफ द वर्ल्ड'

- (c) एम.ए. में प्रयोगात्मक परीक्षा की फ्लेक्स, केन्द्र पर हैड ऑफ द डिपार्टमेंट के साथ परिणाम घोषित होने तक सुरक्षित रहेगी।

उसके पश्चात् वे वि. अध्यक्ष के अधिकार में विभाग में रखी जायेंगी ।

- (d) विश्वविद्यालय परीक्षा में सभी प्रैक्टिकल वर्क्स के लिये वांछित सामग्री (कैनवास, लिनोशीट्स, आयल स्केचिंग पेपर, वाटर कलर पेपर्स, हैण्डमेड कॉट्रेज, प्रिंटिंग पेपर) केन्द्र पर विश्वविद्यालय प्रदान करेगा ।
- (e) स्नातकोत्तर और स्नातक स्तर पर एक वर्ग में बारह से अधिक छात्र नहीं होने चाहिये ।
- (f) चित्रकला विषय में 'हॉनर्स कोर्स' आरम्भ करने के लिये छात्रों की एक वर्ग की संख्या 'तीन' पर्याप्त मान्य होनी चाहिये ।

(g) विशेष :

अतिरिक्त वार्ता में बोर्ड के सदस्यों ने एक विशेष प्रस्ताव रक्खा कि स्नातक स्तर पर एन्ड्रुक विषयों में 'हिस्ट्री ऑफ आर्ट' (हिस्ट्री ऑफ ईस्टर्न आर्ट और हिस्ट्री आफ वेस्टर्न आर्ट, अलग अलग) तथा 'सौन्दर्य शास्त्र' (ईस्टर्न तथा वेस्टर्न) स्वतन्त्र विलयों के स्वरूप में आरम्भ किये जाये । यह विषय सांस्कृतिक उत्थान तथा सौन्दर्य अभिरुचि उत्पन्न करने के लिये तथा सृजनात्म संस्कार घोषित करने के लिये अनिवार्य है ।

- (h) ड्राइंग एण्ड पेन्टिंग में दो अतिरिक्त विशेष प्रमाण पत्र (स्पेशल इजेशन सर्टीफिकेट कोर्स) के लिये प्रस्ताव रक्खा ।

1. सर्टीफिकेट कोर्स के अन्तर्गत निम्न विषय निर्धारित किये गये (द्विर्णीय—नियमित अध्ययन) न्यूनतम योग्यता हाई स्कूल अथवा हायर सैकेण्ड्री ।

- (क) सृजनात्मक संयोजन
- (ख) परम्परागत संयोजन
- (ग) ग्राफिक्स
- (घ) फ्रेस्को,
- (ङ) ब्लॉकप्रिंटिंग (टेक्स्टाइल डिजानिंग एण्ड प्रिंटिंग)
- (च) फोटोग्राफी
- (छ) सिरामिक्स
- (ज) मूर्तिकला
- (झ) इन्टीरियर डेकोरेशन
- (ञ) कॉमर्शियल आर्ट

2. स्पेशियालाइजेशन-सर्टीफिकेट कोर्स । (एक वर्षीय),  
न्यूनतम योग्यता एम. ए. चित्रकला ।

1. सृजनात्मक संयोजन
2. परम्परागत संयोजन
3. ग्राफिक्स
4. म्यूरल
5. फोटोग्राफी
6. पोर्ट्रेचर
7. लैंडस्केप
8. हिस्ट्री ऑफ वर्ल्ड आर्ट
9. आर्ट क्रिटिसिज्म
10. आर्ट एजुकेशन

उपयुक्त कोर्सेज के लिये सेलेक्स वनस्थली के प्रो. भवानीशंकर तथा  
वांसवाड़ा के प्रो. नरेन्द्र अमीन, अगली फैंकल्टी की बैठक में प्रस्तुत करेंगे । इस  
इस प्रकार के प्रयोग वनस्थली में हो रहे हैं और सफल भी रहे हैं ।

वी.ए. आनर्स पार्ट-I—परिवर्तित (B.A.) प्रथम वर्ष के नये पाठ्यक्रम  
के अनुसार :—

वी.ए. आनर्स पार्ट-II—यथावत

, , III , ,

अन्त में आज की बैठक में श्री वेदपाल त्यागी, भू. पू. कुलपति के  
आकस्मिक निधन पर दो मिनट का मौन शोक प्रस्ताव रक्खा गया ।

संयोजक

पाठ्यक्रम अध्ययन मंडल

## APPENDIX—I

## SCHEME OF EXAMINATION

## Drawing and Painting

*(Annual Scheme)*

Each theory paper	3 hours	100 marks
Viva-Voce (Wherever permitted)		100 marks
Dissertation/Thesis/ Survey Work/Field Work, if any :—		100 marks

2. The number of papers and the maximum marks for each paper/practical shall be shown in the syllabus for the subject concerned. It will be necessary for a candidate to pass in the theory part as well as in the practical part (wherever prescribed) of a subject/paper separately.

3. A candidate for a pass at each of the Previous and the Final Examinations shall be required to obtain ( i ) at least 36% marks in the aggregate of all the papers prescribed for the examination and ( ii ) at least 36% marks in practical(s) wherever prescribed at the examination. provided that if a candidate fails to secure at least 25 % marks in each individual paper at the examination and also in the viva-voce test/dissertation/survey report/field work, wherever prescribed, he shall be deemed to have failed at the examination notwithstanding his having obtained the minimum percentage of marks required in the aggregate for that examination. No division will be awarded at the Previous Examination. Division shall be awarded at the end of the Final Examination on the combined marks obtained at the Previous and the Final Examinations taken together, as noted below :

First Division	60% }	of the aggregate marks taken together of the Previous and Final Examinations
Second Division	48% }	
Third Division	36% }	

4. If a candidate clears any Paper(s)/Practical(s)/Dissertation/Viva-voce prescribed at the Previous and/or Final Examination after a continuous period of three years, then for the purpose of working out his division the minimum pass marks only viz 25% (36 % in the case of Practical) shall be taken into account in respect of such Paper(s)/Practical(s)/Dissertation/Viva-Voce as are cleared after the expiry of the aforesaid period of three years: provided that, in case where a candidate requires more than 25% marks in order to reach the minimum aggregate as many mark out of those actually secured by him will be taken into account as would enable him to make up the deficiency in the requisite minimum aggregate.



5. The Thesis/Dissertation/Survey Report/Field Work shall be type-written and submitted in triplicate so as to reach the office of the Registrar at least 3 weeks before the commencement of the theory examinations.

Only such candidates shall be permitted to offer dissertation/Field work/Survey Report/Thesis (if provided in the scheme of examination) in lieu of a paper as have secured atleast 55% marks in the aggregate of all the papers prescribed for the previous examination in the case of annual scheme and I and II semester examinations taken together in the case of semester scheme, irrespective of the number of papers in which a candidate actually appeared at the examination.

6 The Viva-voce test shall be held at the end of the Final Year of the Course. The Collegiate candidates the Non-collegiate candidates as well as the candidates belonging to the correspondence courses shall be allowed an option to offer Viva-voce *provided* they secure atleast 50% marks in the aggregate of all the papers prescribed at the Previous/I and II semesters taken together at the M.A./M.Sc./M.Com. examination.

## DRAWING AND PAINTING

## M.A. Previous Examination

*Scheme (Annual)*

Theory Papers (Any two from the following)

Time : 3 hrs. duration

Paper I	Western Aesthetics	100 Marks
„ II	History of Western Art	100 Marks
„ III	History of Indian Art	100 Marks
„ IV	Eastern Aesthetics	100 Marks

Practicals any two from the following :—

(a)	Landscape Painting	80 Marks
(b)	Portrait Painting	80 Marks
(c)	Graphic Art (line-wood)	80 Marks

*Note* :—Art department should offer only two options each from the theory and practical papers listed above according to the existing facilities available. A department will have to seek special permission to provide more than two options from the theory and practical papers listed above if—

- (i) There are more than five students offering a paper or papers different than the two opted by the department.
- (ii) The department has additional facilities and arrangement for staff and equipments to offer more than two options from the theory and practical papers each.

*Syllabus*

Theory Paper I—Western Aesthetics 100 Marks

Time : 3 hrs. duration

1. Definition and scope of Aesthetics. Plato, Aristotle. Plotinus.
2. Augustine, Aquinas, Albery and Leonardo-da-Vinci.
3. Descartes, Baumgarten, Kant, Schiller, Hegel Schopenhauer.
4. Fechner, Teheodone, Lipps, Vernon Lee, Worringer, Tolstoy Morris. Ruskin, Freud.
5. Croce Santayana, Dewey. Susanme K. Langer, Bullough, I.A. Richards, Clive Bell and Roges Fry.

*Books recommended for Western Aesthetics :—*

- (i) History of Aesthetics by Kutherine Gilbert.

- (ii) A Modern Book of Aesthetics by Melvin Rader.
- (iii) Aesthetic Adventure by William Gaunt.
- (iv) Christian and Oriental Philosophy of Art by A. K. Coomarswamy.
- (v) Transformation of Nature into Art by A. K. Coomarswamy.
- (vi) Western Aesthetics by Dr. Pande (Chaukhamba Series)

Theory Paper II—History of Western Art.

100 Marks

Time : 3 hrs, duration

1. Prehistoric, Primitive and Egyptian painting and Sculpture.
2. Greek painting and sculpture, Roman, Etruscan and Byzantine Painting.
3. Gothic and 'Romanceque painting and sculpture'.
4. Early and High Renaissance Painting.
5. Mannerist, Baroque and Rococo, styles of Painting.

*Books Recommended :—*

1. Indian Painting by Percy Brown.
2. Indian Painting and Sculpture by Karl Khandela Wala.
3. History of Indian and Pakistan by Faber and Faber.
4. History of Indian and Indomission Art by Coomarswami.
5. Survey of Indian Sculpture by S.K. Saraswati.
6. Studies in Indian Painting by N.C. Mehta.
7. Ajanta Fresco by Lady Herringham.
8. Selected examples of Indian Art by Coomarswami

Theory Paper III—History of Indian Art.

100 Marks

Time : 3 hrs. duration

1. Indian painting—Prehistoric, Ajanta, Bagh, Sigriya.
2. Jain, Rajasthani, Pahari and Mughal.
3. Indian Painting—Patna School, Raja Ravi Verma, Bangal School. Amritasher—Gill, Bombay Group and important contemporary Painters.
4. Indian sculpture—Mohan-jo-dharo, Harappa Mavryan, Sanchi, Bharut, Amravati.
5. Indian sculpture—Mathura, Gandhar, Gupta, Ellora, Elephanta and Mahabalipuram.

## Theory Paper IV—Eastern Aesthetics.

100 Marks

Time : 3 hrs. duration

1. Concepts of beauty and art in the Vedas, Upanishads and ancient Indian text and literature.
2. Natya-Sastra of Bharat, Bhavas Rasa Sidhant, Bhatt Lollata, Sankura.
3. Sankhya Theory of Aesthetics. Bhatt Nayak Abhinav-gupta, Dhavoni Siddhant, Savia Concept of beauty, Anandvardhan, Dhuranya Lochan.
4. Silpa Sastra Shadang. Vastayan Citralakshanam, Vishnudharmyattaram.
5. Rabindra Nath Tagore, A. K. Coomarswami E. B. Havell.

*Books-recommended :*

- (i) The Hindu View of Art by Mulk Raj Anand.
- (ii) by S.N. Das Gupta.
- (iii) Tagore on Art and Aesthetics.
- (iv) Christian and Oriental Philosophy of Art by A.K. Coomarswamy.
- (v) Transformation of Nature into Art by A.K. Coomarswamy.
- (vi) Indian Aesthetics by Dr. Pande (Choukhamba Series).

*Practical :*

## Paper A—Landscape Painting.

80 marks

Time Duration two sessions of five hrs.

Landscape painting from sight in oil or water colour with proper handling of medium and perspective Landscapes of Lanes, city Scapes, skyscapes and hill scapes should be painted. Study of bridges, lakes and group of trees with special effects of environment and also effects of light and shadows.

Examination should be conducted on the spot.

*Practical :*

## Paper B—Portrait Painting.

80 marks

Duration : 10 hours in 4 sittings of 2½ hours each on two consecutive days. The sittings every day with a break of 1 hour in between.

Size : Size of the paper ½ Imperial.

Medium : Oil Colour

**Practical :****Paper C—Graphic Art (Lino-wood)****80 marks**

**Duration :** For linocut the duration will be 10 hours on 2 days with 5 hours duration on each day, with a break of 1 hour after  $2\frac{1}{2}$  hours.  
For woodcut the duration will be 10 hours in 4 sittings of  $2\frac{1}{2}$  hours each on two consecutive days. Two sittings every day with a break of 1 hour in between.

**Size :** Size of the graphic should not exceed  $10'' \times 8''$ .

Candidates will submit their preliminary sketches and blocks along with the final prints.

**Submission of work :****Marks 80**

Every candidate will have to submit the following work one month before the commencement of the Annual examination.

- (i) 10 submissions of each practical papers offered executed either in oil colour or water colour. Size—near about  $\frac{1}{2}$  Imp. or larger.
- (ii) 10 work showing study of Modern Trends in painting. Size—not less than  $\frac{1}{2}$  Imp.
- (iii) A sketch-book containing not less than 50 papers. Size— $\frac{1}{4}$  Imp.

Marks on the submission-work will be awarded internally by the Head of the Department of Drawing and Painting. The work of the candidate will be retained by him for one month after the declaration of the result and then returned to the candidates.

**General Instruction :**

- Note :—**(a) Candidates should pass in practicals as well as in theory Papers separately.
- (b) Practical examinations should be arranged one month before the Commencement of theory Examinations.
  - (c) There should be 12 periods for practicals and 6 periods for theory papers plus three periods for sketching in a week.
  - (d) Practical examination shall be conducted at the centre and the answer books will be examined by an External Examiner in consultation with an Internal Examiner.

## DRAWING AND PAINTING

## M.A. Final Examination

Scheme :

*Theory papers :*

(Duration : 3 hrs. each)

(Any two from the following)

Compulsory :

Paper V—History and Philosophy of Modern Art	100 marks
Paper VI—Art. Education and Society	100 marks
Paper VII—Study of Painting from China, Japan and Persia.	100 marks
Paper VIII—Master artists of the world	
or	
Brief study of Eastern and Western Aesthetics.	
—Dessertation in lieu of paper	80 marks
Viva-voce	20 marks

*Practicals :*

(Any two from the following)

(Duration : 10 hrs. in 4 sitting of 2½ hours each)

Paper D—Study from life (Full figure)	80 marks
Paper E—Graphics (Etching and litho)	80 marks
Paper F—Composition	80 marks
Submission of Practical work	80 marks

Syllabus :

*Theory :*

Paper V—History and Philosophy of Modern Art	100 marks
Duration : 3 hours	

1. The turning point in art in the 19th century. Neoclassicism, Romanticism and Realism.
2. Impressionism, Neo-Impressionism and Nabism.
3. Post-Impressionist painting, Fauvism, Cubism and Expressionism.
4. Futurism, Constructivism and other significant Post-Cubist movements.
5. Metaphysical painting, Dada, Surrealism, Abstract art and significant Contemporary movements.

*Theory :*

Paper VI—Art, Education and Society :

The place of Art in General Education. The educational value of art. Principles and aims of teaching

art and art appreciation. What is good art ? Planning art experiences, visit to museums, art galleries and centres of art. Free painting and new concepts of art education. Organising art-exhibitions. Art and the community. Art and international understanding. The place of art in Society. Is art really so useless. The need and methods of making society art-conscious. Social functions of art. How Art has served man from the childhood of the human race. Art and Democracy. Democratic value of Art. Duties of the artist towards society ? How Art has helped in modernising social life and thought ? Importance of art to Modern industry. Art in the homes, Importance of art as a hobby. Art as an instrument for educating the mind.

*Books recommended :*

1. Education and Art : Ziegfeld Edwin (UNESCO) 1953.
2. Education Through Art : Herbert Read.
3. Child Art : Viola.
4. Creative and Mental Growth : V. Lowenfeld (Macmillan Co.)
5. Social Function of Art : R.K. Mukherji.
6. Art in Society : Herbert Read.
7. Art in Industry : Herbert Read.

*Theory*

Paper VII—Study of Painting from China, Japan and Persia.

100 marks

Duration : 3 hrs.

1. Painting during the Six Dynasties and Buddhist painting in China, Buddhist painting in Japan during the Asoka and Nara periods. Sui and Tang Dynasties in China, Chinese pottery.
2. Painting in China during the Five Dynasties, Sung Yuan and Ming Dynasties.
3. Landscape painting, Nature painting, Ink painting. Bamboo painting, Scrolls and Screen painting in China and Japan.
4. Painting during Heian, Kamakura periods in Japan and Painting from Muromachi period to the end of Edo Period in Japan.

## 5. Persian painting upto the end of Safawid period.

## Paper VIII—Master Artists of the World.

Giotto (जियोतो) । Leonardo da Vinci लियोनार्दो द विन्सी ।

Raphael रेफेल । Michelangelo माइकेलेजेलो ।

Durer ड्यूरर । Titian टिटियॉ । Elgreco एलग्रीको । Rubens

रुबेन्स । Poussin पोसि । Caravaggio कारावेज्जियो । Velazquez

वेलास्क्वी । Frans Halls फ्रांस हॉल्स । Rembrandt रेम्ब्रॉ ।

Goya गोया । David डेविड । Constable कॉन्स्टेबल । Turner

टरनर । Courbet कोर्बे । Gericault जेरिको । Ingres इंग्रे

Daumer दामिया । Manet माने । Monet मोने । Degas

देगॉ । Seurat स्युरॉ । Renoir रेनॉय । Van Gogh वॉनगॉ ।

Cezanne सेजा । Gauguin गागुई । Picasso पिकासो । Braque

ब्राक । Henri Matisse हेनरी मातिस । Salvador Dali सेल्वा-

दोर दाली । Miro मीरो । Rousseau रूस्या । Chirico चिरिको ।

Sotatsu सोतासु । Sesshu सेशु । Heroshige हीरोशीजी ।

Hokusai होकुसाई ।

Hsieh-Ho सी-हो । Yen li Pen येन ली पेन । Wang Wei

वांग वे । Wu-Tao-tzu वूताओजू । Hankan हाककान । Kuc-Hsi

कूओशी । Vihzad विहिजाद ।

Raja Ravi Verma राजा रवि वर्मा । Amrita Shergil अमृता

शेरगिल । A.N. Tagore अवनोन्द्रनाथ ठाकुर । N.L. Bose

नन्दलाल बोस । S.G. Thakur Singh एस. जी. ठाकुर सिंह ।

Bendre बेन्द्रे । M.F. Husain एम. एफ. हुसेन । S. Chavda

श्यावदा चावडा । M L. Nagar मदनलाल नागर । H.L. Merh

हरिहरलाल मेह । S. Khastgir सुधीर खास्तगीर और Ramkumar

रामकुमार ।

*Books recommended :*

Out line of Art—by William Orpen.

A History of Western Art—by John Iyes Sewall.

A History of Western Art—by Michael Leyey.

Series of the contemporary artists Published by Central  
Lalit Kala Akadami.



The Story of Art—by E.H. Combrich.

The Story of Painting—by H.W. Jonson.

The World's Gratest Paintings—by T. Leman Hare.

OR

### BRIEF STUDY OF EASTERN AND WEST AESTHETICS

Definition of Aesthetics for Eastern and Western conception of 'Beauty'.

सौन्दर्य की पश्चिमी और पूर्वीय धारणायें ।

Plato प्लेटो । Aristotle अरिस्टोटल । Augustine आगस्टाइन ।

Leonardo da Vinci कियोनाडों द विन्सी । Baumgarten

बामगार्टन । Hegel Hegel, Scheelling शेकिंग । Kant कान्ट ।

Freud फ्राइड । Tolstoy टाल्सटाय । Mooris Weitz मूरिस वेज ।

Croce क्रोचे । G. Santayana जार्ज सेन्टाइना । S.K. Langer

एस. के. लैंगर । I. A. Rechords आइ. ए. रिचार्ड्स । रोजर

फ्राय Roger Fry.

Natya Shastra नाट्य शास्त्र । Ras Siddhant रस सिद्धान्त ।

Buddha concepts of beauty सौन्दर्य पक्ष बुद्ध दर्शन । Ved

and Upanishads वेद उपनिषद् में सौन्दर्य । Vatsyayan

वात्सायन । Vishnu Dhamottram विष्णु धर्मोत्तरम । Shaiva

शैव । वैष्णव Vaishnava. Shakti शक्ति । Rabindra Nath

Tagore रबीन्द्र नाथ ठाकुर । A. K. Coomar Swami

आनन्द कुमार स्वामी ।

#### *Books recommended :*

History of Western aesthetics.

K. G. Gilbert.

History of West Aesthetics.

Dr. K.C. Pande.

History Oriental Aesthetics.

Dr. K.C. Pande.

Robindra Nath Tagore on Aesthetics.

Hindu View of Art :

Mulakraj Anand.

#### *Practical :*

( Any two of the following )

Paper D —Study from life (Full figure)

80 marks

Duration : 10 hours in 4 sittings of 2 hours

each on 2 consecutive days. Two sittings every day with a break of 1 hour in between.

Size of the paper : Imperial

Medium : Oil colour or water colour.

Paper E—Graphics (Etching and litho) 80 marks

Duration : 10 hours in 4 sittings of 2 hours each on two consecutive days. Two sittings every day with a break of 1 hour in between.

Size : Size of the graphic should not exceed 10" x 8".

Candidates will submit their preliminary sketches and blocks along with the final prints.

Paper F—Composition : 80 marks

Duration : 2 Sittings of 2½ hours each every day with a break of 1 hour in between for 5 days.

Size of the paper : Imperial

Medium : Oil colour or tempera.

The candidates will prepare a composition on a given subject. Preliminary sketch of the final composition, will be done and submitted after the first sitting which will be attached to the final composition. Treatment may be traditional, realistic or modern.

#### Dissertation work :

The dissertation shall be submitted in triplicate to the Head of the Department at least three weeks before the commencement of the examination. only such candidates shall be permitted to offer dissertation who have secured at least 55% marks in the aggregate in B.A. Examination. 80 marks

#### Submission of work :

Every candidate will have to submit the following work one month before the commencement of the Annual examination (Final).

- (i) 10 submissions of each practical papers offered executed either in oil colour or water colour. Size near about ½ Imp. or larger.
- (ii) 10 work showing study of Modern Trends in painting. Size not less than ½ Imp.
- (iii) A sketch-book containing not less than 50 pages. Size—¼ Imp.

MINUTES OF THE MEETING OF THE BOARD OF  
STUDIES IN EDUCATION HELD ON THE 10TH  
NOVEMBER, 1979 AT 12.00 NOON IN THE  
UNIVERSITY OFFICE, JAIPUR.

Present :

- |                          |                 |
|--------------------------|-----------------|
| 1. Dr. L.K. Oad          | (Convener)      |
| 2. Shri B.L. Bhojak      |                 |
| 3. Shri A.R. Sharma      |                 |
| 4. Dr. J.K. Sood         |                 |
| 5. Shri Raman Behari Lal | External Member |
| Shri H.H.A. Bourai       | Dean            |
| Shri V.B.L. Mathur       | Special Invitee |

1. Under section 34(4)(iv) of the University Act, Shri A.R. Sharma, Principal, G.P. College of Education, Bagar was unanimously *elected* as member other than the Convener of the Board of Studies in Education to serve on the committee for selection of examiners for the session 1979-80.

2. *The Board considered* the draft panel of examiners prepared by Dr. L.K. Oad, Convener, B.O.S. in Education in terms of resolution No. 3, dated the 29th August, 1978 of the Board and placed in the meeting itself by him.

In this connection *the Board also noted* that the University could not supply the statement of qualifications and teaching experience etc. of teachers in the affiliated colleges and other Universities.

*Resolved that* the panel placed by Dr. Oad *be approved*. The Board also desired that the aforesaid panel of examiners be got cyclostyled by the office leaving sufficient space for further additions/alterations.

3. The Board after going through the reports of examiners and question papers set for the examination of 1979 *resolved to*

*recommend* as under :

- (i) The contents of the aforesaid reports of examiners *be noted*.
- (ii) The following be communicated to the paper-setters and examiners while sending the answer books for assessment :

“Examiners reports should consist of question-wise comments on the performance of the students besides an overall view.”

- (iii) The following instructions be sent to the paper-setters while sending the material to them for setting the question papers :

“The question paper having Hindi as well as English version should contain the following note the question paper :

*N.B. :—*Answers attempted in English shall be guided by the English version of the question paper; similarly answers attempted in Hindi shall be guided by the Hindi version of the question papers ”

- (iv) The Board further stressed that the consolidated examiners' reports be prepared, published and circulated in time to all the colleges for improvement in the quality of teaching.

4. The Board considered a representation jointly signed by the various students of M.Ed. class of Gandhi Vidya Mandir Basic T.T. College, Sardarshahr regarding removal of disparity in number of questions set in different papers of M.Ed. Examination, (*Vide Appendix—I*).

In order to remove the disparity in the question-papers in respect of number of questions, *the Board resolved to recommend that* each question-paper of the M.Ed. Examination should have atleast 10 questions out of which the candidate should have the option to attempt any 5 questions. The paper setters be informed accordingly.

5. The Board perused the existing courses of study and text-books in the subjects for the following examinations together with the relevant regulations/ordinances and statutes :

- ( i ) M.Ed. Examination of 1982.
- (ii ) B.Ed. Examination of 1981.
- (iii) Summer school cum-correspondence course for B.Ed. Examination of 1982.
- (iv) Shiksha Shastri Examination of 1982.

In this connection, the Board also considered the following:-

- ( i ) Recommendations made by the Committee (appointed by the Board of Studies in Education vide its Res.No. 10(I), dated 29th August, 1978) for revision of B.Ed./ B.Ed. (S. S. C. C. C.)/(Shiksha Shastri courses, at its meeting held on the 17th to 19th September, 1979.
- ( ii ) Recommendations made by the committee (appointed by the Board of Studies in Education vide its Res.No. 10(I) dated the 29th August, 1978) for revision of M.Ed. courses of Study at its meeting held on the 8th November, 1979.

*Resolved to recommend as follows :*

- (I) The existing courses of study prescribed for the aforesaid examinations of 1981 *be repeated* for the corresponding examinations of 1982.
- (II) The aforesaid recommendations of both the committees *be not accepted* for the present. The same be circulated to the Principals of all the colleges affiliated to the University in the Faculty of Education and the principals be requested to circulate the same amongst the teachers of the colleges concerned for their comments. The comments so received by the Principals be forwarded to the convener, Board of Studies in Education at the earliest. The convener be requested to consolidate the comments and same be placed before the Board of Studies in Education, at its next meeting for consideration.

6. With reference to the Res.No. 9 of the Board of Studies in Education dated the 29th August, 1979, the Board considered the comments received from Shri S. B. Maheshwari, Reader in Commerce Education, Regional College of Education, Ajmer on the letter of Shri S.S. Vahal regarding the courses of study prescribed for Paper V/VI under group 'A' for the B.Ed. Examination (Vide Appendix-II).

*Resolved that the consideration be postponed for the next meeting.*

7. With reference to the Faculty of Education, Res. No. 26, dated the 9th/10th March, 1979, the Board considered a letter No. D3/8796, dated the 23rd February, 1979 received from Shri G.L. Bhargava, Co-ordinator, Institute of Correspondence Studies and Continuing Education, Jaipur regarding the syllabus of B.Ed. Examination. (vide Appendix-III).

*Resolved that the consideration be postponed for the next meeting.*

N.B. : Since the resolution Nos. 6 and 7 of these minutes also relates to courses of study, the same may be considered at its next meeting alongwith the comments so received on the revised courses of study.

The meeting ended with a vote of thanks to the chair.

Sd/-

Dr. L.K. Oad

Convener,

B.O.S. in Education

## APPENDIX—I

( *Ref. Res. No. 4 of the minutes* )

To,

The Registrar,  
University of Rajasthan,  
JAIPUR.

*Subject* :—Removal of disparities in number of questions set in different papers of M.Ed. Examination.

Sir,

We the M.Ed Students of this college wish to bring in your kind notice the fact that the number of questions in each paper is usually ten, but it has been observed that in some papers such as paper No. 2 & 3 and the some of optionals papers is some times eight or nine. Usually at post graduate level the choice given in each paper is 50% percentage.

The M.Ed Students have to suffered in some of the paper because of less number of questions asked.

We therefore request you to maintain uniformity in each paper. Atleast ten questions should be asked out of which the candidate should be allowed to answer any five out of them.

We hope that our proposal will be placed before the Board of Studies and appropriate decision be taken in time so that the M.Ed. students of this year may not suffer due to disparities in the number of questions in different papers.

*Yours faithfully*

All Students of M.Ed. Class  
Basic T. T. College. Sardarshahar.

Copy to :

- (1) The Dean. Faculty of Education,  
Rajasthan University, Jaipur.
- (2) The Convener, Board of Studies,  
Rajasthan University, Jaipur.

## APPENDIX—II

( *Ref. Res. No. 6 of the minutes* )

Copy of letter No. F. RCE/Com./78/100/7689, dated 26th July, 1979 received from Shri S.B. Maheshwari addressed to the Registrar.

*Subject* :—Reg. the Courses of Study, prescribed for paper V/VI under group 'A' for the B.Ed. examination.

Dear Sir,

Kindly refer to your letter No. F. 12(3) Aca. I/Reg./78/1421 of 24-2-79. My comments pertaining to the issues raised by Shri S. S. Vahal, Lecturer, J.L.N., T.T. College Kota are as follows :

1. I tend to agree with his assessment that the Content Part of the 'Commercial Practice Paper' (17) under Group 'A' is very heavy. I may further add that it is unimaginatively formulated and doesn't serve the requisite purpose.
2. I also agree with his contention that 'Economics and Commercial Geography of the World' not being the part of Commerce Practice, at all, are optional subjects and as such shouldn't be conglomerated with this subject. I approve of his suggestion that this area, that is, 'Economics and Comm. Geography' may be included separately under Methods Papers, of course, under suitable nomenclature.
3. It is however felt that some preliminary concepts and basic information under Money and Banking and should be part of any course of Commerce Practice, and as such some reference to it under 'Content' may be called for. Also a separate Methods Paper for this subject is neither necessary nor possible as it cannot have a different methods course from 'Commerce Practice.'
4. 'Content' part of the paper needs radical revision. It has to be made purposive and realistic. This is also true to various Content-cum-Methods Papers related to Business Education as they are available now in the University.

Sd/- S. B. Matheshwari



## APPENDIX—III

( *Ref. Res. No. 7 of the minutes* )

Copy of the letter No. D3/8796 dated 23-2-1979 received from Shri G. L. Bhargava Cordinator, Institute of Correspondence Studies and Continuing Education, University of Rajasthan, Jaipur. Addressed to Registrar University of Rajasthan, Jaipur.

I wish to draw your kind attention towards the syllabus of the teaching subjects prescribed for B. Ed. examination in Social Studies and General Science. In the ensuing scheme of 10+2 prepared by the Board of Secondary Education Rajasthan, Ajmer, these subjects have no place. Accordingly these two subjects should be deleted from the Syllabus of B.Ed. Examination.

This fact may kindly be placed in the next meeting of the Faculty of Education for their consideration and these subjects might be deleted from the courses for the B.Ed. Examination, 1980.

Submitted for favour of early consideration.

MINUTES OF THE MEETING OF THE COMMITTEE OF  
COURSES IN LIBRARY SCIENCE AND DOCU-  
MENTATION HELD ON 12TH NOVEMBER,  
1979 AT 12.00 NOON IN THE UNIVERSITY  
OFFICE, JAIPUR.

Present :

- |                          |                 |                  |
|--------------------------|-----------------|------------------|
| 1. Shri S.N. Srivastava, | <i>Convener</i> |                  |
| 2. (Mrs.) Usha Pawan     |                 |                  |
| 3. Shri C.L. Sharma      |                 |                  |
| 4. Prof. P.B. Mangla     |                 |                  |
| 5. Dr. Jagdish S. Sharma |                 |                  |
| 6. (Mrs.) P. Dhyani      | }               | Special invitees |
| 7. Shri S.P. Sood        |                 |                  |
| 8. Shri P.K. Gupta       |                 |                  |
| 9. Shri B.S. Garg        |                 |                  |
| 10. Dr. S.C. Verma       |                 |                  |
| 11. Shri G.S. Champawat  | }               |                  |

1. The Committee revised the existing Panel of examiners  
*Vide Appendix-A*

2. The Committee offered *no comments* on the reports of examiners and question papers set for the examinations of 1979.

3. The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes :—

(i) Certificate Course in Library Science Examination,  
March. 1981 and 1982—*Vide Appendix-B*

(ii) Bachelor of Library Science and Documentation Examination, 1981 and 1982  
*No change*

(iii) Master of Library Science and Documentation Examination, 1981 and 1982  
*No change*

4. The Committee further resolved to recommend that :
- (i) For the M.Lib Sc. & Doc. Course, the minimum pass marks in each paper be 40% and the aggregate pass marks be 50%
  - (ii) Out of the experienced candidate quota already fixed in the syllabus for admission to B.Lib. Sc. & Doc. Course. admissions be given only to such candidates as are employed in the recognised libraries of Rajasthan.

For the purpose necessary rules, regulations and ordinances be amended accordingly.

The meeting ended with a vote of thanks to the Chair.

Sd/—  
(S.N. Srivastava)  
*Convener*

## APPENDIX—'A'

## Panel of Examiners in Library Science &amp; Doc.

S. No.	Name (surname first) with Academic Qualifications and designation	Name of Institution in which serving
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## Internal :

1.	Srivastava, Shyam Nath, Reader.	University Department of Library Science & Doc. Jaipur.
2.	Mrs. Dhyani, P. Head.	—do—
3.	Sood, S.P. Lecturer.	—do—
4.	Mrs. Usha Pawan Lecturer.	—do—
5.	Dr. Verma, S.C. Lecturer.	—do—

## External :

1.	Khan, H.A., Reader	Department of Library Science Mysore University, Mysore.
2.	Bhargava, G.D., Prof. & Head.	Department of Library Science, Vikram University, Ujjain.
3.	Dalal, K.S. Librarian,	Kurukshetra University, Kurukshetra.
4.	Sirajuddin. S., Reader,	Department of Library Science, Aligarh Muslim University, Aligarh.
5.	Gupta, Kamleshwar Nath, Lecturer.	Department of Library Science, Delhi University, Delhi.
6.	Issac, K.A., Librarian and Head of the Department of Library Science.	Kerala University, Trivendrum.
7.	Kashyap, M.M., Lecturer,	Department of Library Science, Delhi University, Delhi.
8.	Kaula. P.N., Prof. & Head	Department of Library Science, Banaras Hindu University, Varanasi.
9.	Kidwai, A.H., Reader	Department of Library Science, Muslim University, Aligarh. Director, Library, Indian Institute of Islamic

- |  |  |
|--|--|
|  | Studies Tughlaqabad, Madaugir,<br>NEW DELHI.                                   |
| 10. Krishna Kumar, Reader,                                   | Department of Library Science,<br>Delhi University, Delhi.                     |
| 11. Agarwal, S.S. Asstt.<br>Prof.                            | Department of Library Science,<br>Vikram University, Ujjain.                   |
| 12. Kumbhar, Mahadevagoud<br>Rudragoud,<br>Reader and Head.  | Department of Library Science,<br>Karnatak University, Dharwar.                |
| 13. Prof. Mangala, P.B.                                      | Department of Library Science,<br>Delhi University, Delhi.                     |
| 14. Patil, P.K., Librarian,                                  | Mysore University, Mysore.   |
| 15. Shri Sudhir Kumar,<br>Lecturer,                          | Department of Library Science,<br>Vikram University, Ujjain.                   |
| 16. Rastogi, V.S., Lecturer,                                 | Punjab University Library,<br>Chandigarh.                                      |
| 17. Sharma, C.D., Reader                                     | Department of Library Science,<br>Banaras Hindu University,<br>Varanasi.       |
| 18. Sharma, Jagdish Saran<br>Librarian and Head,<br>Lib. Sc. | Punjab University, Library,<br>Sector—14, Chandigarh.                          |
| 19. Srivastava, B.N.   | M.L.B. College, Gawalior.  |
| 20. Bansal, G.C., Head                                       | Department of Library Science.<br>Kurukshetra University,<br>Kurukshetra.      |
| 21. Khan, N.H.   | Department of Library Science<br>Kashmir University, Kashmir.                  |
| 22. Prof. Neelameghan, A<br>Head.                            | Documentation Research &<br>Training Centre, Bangalore,                        |
| 23. Bhattacharya, G.<br>Professor.                           | —do—   |
| 24. Shri Gopi Nath, Lecturer,                                | —do—   |
| 25. Rajan, T.N.,<br>Scientist-Incharge                       | Training Cenre, IN SDOC.<br>Jawahar Lal Nehru University,<br>Campus, N. Delhi. |
| 26. Rajgopalan. T.S.<br>Scientist Incharge.                  | TNSDOC, Hillside Road. New-<br>Delhi.  |
| 27. Dr. Sharma N.K.<br>Lecturer,                             | Department of Library Science,<br>Kurukshetra University<br>Kurukshetra.       |
| 28. Miss Navalani, K.,<br>Reader.                            | Department of Library Science,<br>Panjabi University, Patiala.                 |

- |   |  |
|---|--|
| 29. Vashishta, C.P.,<br>Lecturer,             | Department of Library Science,<br>University of Delhi, Delhi.            |
| 30. Khan, Almuxaffar A.G.<br>Lecturer,        | Department of Library Science,<br>Aligarh Muslim University,<br>Aligarh. |
| 31. Wali, M.L., Lecturer,                     | Department of Library Science,<br>Kashmir University, Srinagar.          |
| 32. Murthy, A.T. Lecturer,                    | Department of Library Science,<br>Vikram University, Ujjain.             |
| 33. Guha, B., Scientist                       | INSDOC Hillside Road, New-<br>Delhi-12.                                  |
| 34. Dr. Sangar, H.S.,<br>Librarian and Head.  | Sagar University, Sagar.   |
| 35. Sharma, H.D., Librarian.                  | Banaras Hindu University,<br>Varanasi.                                   |
| 36. Mohd. Sabir Husain,<br>Reader,            | Department of Library Science,<br>Aligarh Muslim University,<br>Aligarh. |
| 37. Grover, D.R., Lecturer.                   | Department of Library Science,<br>Punjab University, Chandigarh.         |
| 38. Miss Navjot Kaur,<br>Lecturer,            | Department of Library Science,<br>G.H.D. University, Amritsar.           |
| 39. Shri Kripal Singh,<br>Librarian and Head. | G.H.D., University, Amritsar.  |
| 40. Kumar, P.S.G. Head.                       | Department of Library Science,<br>Nagpur University, Nagpur.             |
| 41. Karisidappa, C.R.<br>Lecturer,            | Department of Library Science,<br>Karnatak University, Dharwar           |
| 42. Satyanarain, N.R.,<br>Lecturer.           | Department of Library Science,<br>Lucknow University, Lucknow.           |

## APPENDIX—B

Certificate Course in Library Science Examination March, 1981&1982

*Replace the existing provisions with the following :*

**Paper I : Classification and Cataloguing (Theoretical)**

**(a) Classification (Theoretical) :**

Definition, need and purpose of Library Classification, Notation : its types and qualities, Main features of Colon Classification and Dewey Decimal Classification, Principles of helpful sequence, General aspects of common Isolates/Standard Sub-divisions, Geographical Chronological and Subjects Devices.

**(b) Cataloguing (Theoretical) :**

Definition, need and purpose of Library Catalogue, Physical forms of Library Catalogue, e.g Card Catalogue and book catalogue etc., Kinds of entries, e.g. Main entries and added entries, A general Study of the main feature of Classified and Dictionary catalogue codes of Dr. S.R. Ranganathan.

**Paper II : Classification (Practical)**

Practical Classification of simple titles according to Decimal Classification Ed. 18 and Colon Classification. Ed. 6. (Reprinted 1963).

**Paper III : Cataloguing (Practical)**

Practical Cataloguing of Simple titles with Classified Catalogue code and Dictionary Catalogue code Ed. 5 of Dr. S.R. Ranganathan. Corporate authorship is to be included only upto the Organ of first remove.

**Paper IV : School and Public Library Organisation**

**(a) School Library :**

Objectives, organisation and administration of school library. Problems of a school library and their possible solutions. Relationship of librarian with students and teachers, Qualities of a school librarian. School library committee. Library period, general literature for School Libraries.

**(b) Public Library :**

Aims and objectives of Public Libraries. State of Public Libraries with special reference to India and possible solutions. Public Library Committee, Public relation work in a public library.

**Paper V : Library Routine and Reference Work :****(a) Routine :**

Selection, ordering, and accessioning of books. Accession register, Needs and methods of display, Maintenance of books and periodicals. Budgeting and statistics. Library rules in connection with membership issue of books, and library hours.

**(b) Definition, need and purpose of Reference work. Types of reference Service—Ready reference Service and long-range reference service. Initiation, study and description of a few reference books suitable for small libraries.**



MINUTES OF THE SECOND MEETING OF THE  
BOARD OF STUDIES IN SOCIOLOGY HELD  
ON 17TH DECEMBER, 1979 AT 12.00  
NOON IN THE VICE-CHANCELLOR'S  
SECRETARIAT (NEW BUILDING),  
UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Shri J. P. Sharma ( *Convener* )
  2. Shri H. S. Verdia
  3. Shri V. P. Sharma
  4. Shri H. K. Rawat
- Dr. N. K. Singhi (Special invitee)

1. With reference to the Board of Studies vide its Res. No. 4(iv), dated 8th Sept., 1979 *the Board recommended* the courses of study for M. A. (Prev.) Examination, 1982 and M.A. (Final) Examination, 1983 as follows :

Scheme :

There shall be nine papers. Each paper will carry 100 marks and will be of 3 hours duration.

Candidates will choose one of the optional papers from among those prescribed as Paper-IV (in Previous) & VIII (in Final)

Candidates can either offer Viva-voce (Paper-IX) or a paper in lieu thereof in the final Examination, from amongst the Paper VIII.

Papers I, II & III are compulsory for Previous and  
Papers V, VI & VII are compulsory for Final.

M. A. (Previous) 1982 :

Paper I—Theoretical Sociology

Paper II—Logic & Methods of Sociological Research.

Paper III—Indian Social System (I).

Paper IV—Special optional Papers—Any one of the following :—

- (a) Industrial Sociology
- (b) Elementary Sociological Statistics
- (c) Social Psychology.
- (d) Population Studies.
- (e) Sociology of Education
- (f) Monograph.
- (g) Social Anthropology.
- (h) Sociology of Economic Development.
- (i) Sociology of Law.
- (j) Rural & Urban Sociology.

M.A. (Final) 1983 :

Paper V —Contemporary Sociological Theories.

Paper VI —Sociological Thought.

Paper VII —Indian Social System (II)

Paper VIII—Special optional papers—Any one/two ( for those who do not offer Viva-Voce) of the following :—

- (a) Thesis-or Dissertation.
- (b) Sociology of Formal Organisations.
- (c) Medical Sociology.
- (d) Criminology.
- (e) Political Sociology.
- (f) Sociology of Movement.
- (g) Advanced Sociological Statistics.
- (h) Sociology of Arts & Literature.
- (i) Sociology of Religion.
- (j) Social change in India.

Paper IX—Viva-Voce  
or

Candidates who do not offer Viva-Voce shall be required to offer one more paper in addition to the paper offered, from amongst optional paper under Paper-VIII.

Since special invitees could not attend the meeting and a depth study of the syllabus changes could not be made, the Board

further decided to discuss these changes in the subject Committee meeting which is held one day prior to the Faculty meeting. The detailed courses for these papers and the list of recommend books shall be prescribed, only after these discussions have been held.

2. With reference to the Board of Studies vide its Res. No. 4 (V) dated 8th Sept., 1979. *the Board recommended* that the existing courses of study be repeated for the M. Phil examination of 1982.

The meeting ended with a vote of thanks to the chair.

Sd/- (J.P. Sharma)  
*Convener*  
 B.O.S. in Sociology.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN ECONOMIC ADMINISTRATION AND FINANCIAL  
MANAGEMENT HELD ON 4TH OCTOBER, 1979  
IN THE VICE-CHANCELLOR'S SECRETARIAT,  
UNIVERSITY CAMPUS, JAIPUR.

**Present :**

- |                       |                  |
|-----------------------|------------------|
| 1. Prof. Om Prakash,  | <i>Convener.</i> |
| 2. Shri P.N. Mathur,  |                  |
| 3. Shri M.L. Verma,   |                  |
| 4. Shri R.S. Agarwal, |                  |
| 5. Dr. N.K. Sharma,   |                  |
| 6. Dr. M.D. Sharma,   |                  |

( Shri K.K. Mehrishi could not attend the meeting ).

1. The minutes of the meeting of the Board of Studies in Economic Administration and Financial Management held on the 7th and 8th September, 1978 *were confirmed.*

2. Under Sec. 34 (4) (iv) of the University Act, the Board *elected* Shri R.S. Agarwal, Post-graduate Head in Economic Administration and Financial Management, R.R. College, Alwar as a member other than the Convener of the Board of Studies to serve on the Committee for Selection of Examiners in the subject for the year.

3. It was reported to the Board that no request containing the qualifications and teaching experience etc. of the teachers was received from the University Teaching Departments, Universities Colleges, Affiliated Institutions and other university for inclusion in the revised panel of examiners. The Board, to prepare the panel of Examiners in terms of Statute 25 (2) (a), resolved as follows :

- (A) A letter may be sent to the Principals of the colleges affiliated to the University in the Faculty of Commerce

and the list of teachers with their qualifications, teaching experience and specialisation in terms of Statute 25 (1) of the University Hand Book Part-II may be obtained immediately,

- (B) A committee consisting of the following members of the Board be appointed to scrutinize the returns as stated in para A and to prepare the panel of examiners in terms of S.25 (2) (a), internal and external separately :—

- (i) Dr. N.K. Sharma, Beawar (Convener)
- (ii) Shri R.S. Agarwal, Alwar
- (iii) Shri M.L. Verma, Sikar.

- (C) The meeting of the committee may be held on the 27th October, 1979 and the panel of examiners so prepared by the Committee may be finalised by the Board on the 29th October, 1979.

4. The Board *persued* the reports of examiners and question papers for the examinations of 1979.

5. The Board recommended courses of study and text books in the subject for the various examinations together with the relevant additions and/or alterations to the regulations and ordinances wherever necessary as per Appendix-I.

6. With reference to the Academic Council Res. No. 11 dated 1st June, 1979 and the Syndicate Res. No. 2 dated the 16th June, 1979, *the Board required no readjustment* of the courses of study for the Annual Scheme of Examination in the M.S.S. the syllabus applicable for the Previous examination of 1981 and Final Examination of 1982 consequent upon the abolition of the Semester Scheme of Examination.

7. The Board *noted that* the Academic Council vide its Res. No. 14 dated the 11th March, 1979 considered a proposal

received from the Director, Institute of correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated 24th December, 1978 to the effect that the students of M.A./M.Com. of the Institute be allowed to offer Viva-voce at the M.A./M.Com. Final examination and resolved that :

- (i) The facility of offering viva-voce permitted to the students of correspondence studies for the examination of 1979 be also extended for the M.A./M.Com. Examination of 1980,
- (ii) In respect of the matter of allowing candidates to appear in the Viva-voce the collegiate, the non-collegiate and the students of correspondence Institute be treated at par, and option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter for recommending courses of study of an alternative paper wherever necessary be referred to the Board of Studies under the purview of the Faculties where the viva-voce is permissible.

Accordingly, the Board *recommended* amendments in paper prescribed to be offered in lieu of viva-voce (Appendix-II) for the examination of 1980 and on wards.

8. The Board noted that the Board of Studies in Economic Administration and Financial Management vide its Res. No. 13 dated 7/8th September, 1979 allotted the work of translation to 5 members and *resolved* that the same be sent to the Convener of the B.O.S. latest by the 10.10.79 and then another meeting be convened to complete the work.

The Board *resolved* that the matter may be considered on the 29th October, 1979 when the Board would meet again.

9. With reference to Academic Council Res. No. 10 dated the 1st June, 1979 and the Syndicate Res. No. 3 dated the

16th June, 1979, the *Board resolved* that the Units mentioned in various papers be *deleted*, consequent upon the abolition of the unit system.

10. With reference to the Faculty of Commerce Resolution No. 14 dated 17/18 March, 1979, the Board considered the proposal made by Shri J.P. Srivastava, Incharge (M.Com.), Institute of Correspondence Studies and Continuing Education, University of Rajasthan, Jaipur as contained in his letter No. M.C.A./45959 dated the 3.3.79 duly forwarded by the Director of the Institute regarding introduction of 'Elementary Mathematics' as a compulsory paper at graduate level.

*The Board resolved* that the aforesaid proposal be *not* accepted.

11. With reference to the Faculty of Commerce Resolution No. 7 dated the 17/18 March, 1979 read with Resolution No. 15 dated 1.10.78 of the Academic Council, the Board *considered the* following proposal as contained in letter No. V/VII (109) 78/25444-25508 dated 31-8-78 received from the Evaluation, Officer, Association of Indian Universities, New Delhi regarding introduction of syllabus for population studies at the undergraduate level :—

"The population Policy of Government of India was welcomed. It was noted that the agricultural universities had already recommended that the population education, be made compulsory subject for their under-graduate courses. Resolved that a model syllabus for population education be prepared and circulated to the Universities for adoption in their undergraduate curriculum."

The Board *observed* that the same had already been prescribed at the under-graduate level.

12. With reference to the Academic Council Res. No. 6 (v) dated the 1st June, 1979 read with the Res. No. 6-II of the Faculty of Commerce dated the 17/18th March, 1979 the Board

finalised the guide-lines for the courses of study for an optional group 'Co-operation' newly introduced in the M.Com. (E.A.F.M.) level and *authorised* the following members of the Board to prepare courses and submit them on the 29th October 1979, at the time when the Board meets again :

- (i) Shri P.N. Mathur,
- (ii) Dr. N.K. Sharma,
- (iii) Shri R.S. Agrawal,
- (iv) Shri M.L. Verma,
- (v) Prof. Om Prakash.

The meeting of the Board of Studies was adjourned to meet again on the 29th October, 1979 at 12.00 noon for consideration of various matters including the following areas of employment orientation identified for Department of Economic Administration and Financial Management at the joint meeting of the three Boards of Studies on October 3, 1979 :

- (i) Small Scale and Agro-Industries,
- (ii) Project Planning and Infrastructure Management and
- (iii) Development Banking and Investment Devisions,

Sd/-  
Convener.



## APPENDIX I

(Ref. Res. No. 4 of the minutes)

I year T.D.C. Com. (Pass) Course exam., 1982.

## Indian Economy—Unit 1

The word Economic growth be deleted and insert  
 “Commercial Geography in place of it so as to read as follows  
 “Meaning, scope and significance of Commercial Geography”

(b) Following books published by Rajasthan Hindi Granth Academy, Jaipur, be added at appropriate places :—

- (1) K.E. BOULDING आर्थिक विश्लेषण  
(Hindi trans) Part I and II Rs 15/-
- (2) Meena Gupta केन्द्रीय अर्थशास्त्र, संस्करण, 1977  
रु० 12,000
- (3) हरि मोहन माथुर, राजस्थान का औद्योगिक विकास,  
संस्करण, 1977, रु० 26.50
- (4) सार्वजनिक वित्त के सिद्धान्त,  
प्रेम प्रकाश शर्मा, संस्करण 1976, रु० 20.00 (छात्रों के  
लिये रु० 16.00)
- (5) मूल्य सिद्धान्त,  
पी०एन० मेहता संस्करण 1968, रु० 22.00 (छात्रों के  
लिये रु० 17.00)
- (6) कीमत प्रणाली एवं साधन आवंटन,  
रिचर्ड एच० लेफ्टविच, संस्करण, 1975 रु० 18.00  
(छात्रों के लिये रु० 15 00)
- (7) द्रव्य व्यापार और विनियोग—  
जार्ज जी०जी०एच० कोल, संस्करण, 1974, रु० 15/-
- (8) मुद्रा एवं बैंकिंग—डी.एन. चतुर्वेदी  
मूल्य 20/- संस्करण, 1978  
(छात्रों के लिये रु० 14.00)

N.B. : Books at sl. Nos. 1,2,5 and 6 were for M.Com.  
(Economic Analysis).

Book No. 4 for M.Com. (Public Finance)

Book No. 3 for M.Com. (Industrial Economics)

Book No. 7 for M.Com. (Monetary Policy)

Book No. 8 for B.Com.

## APPENDIX II

( *Ref. Res. No. 7 of the Minutes* )

Delete the following three out of the six topics for Essays in the syllabus for M.Com. (Annual Examination Scheme) Paper in LIEU of Viva-Voce (Appearing on page 36 of 1978 ed.)

- (i) Efficiency Criteria for Public Enterprises (No. 1)
- (ii) India's Industrial Policy of December, 1977 (No.3)
- (iii) Integrated Rural Development (No. 6)

INSTEAD, insert the following three new topics :—

- (i) Joint Sector in Indian Economy (at Sl. 1)
- (ii) Control of Industrial Monopoly (at Sl. 3)
- (iii) Agricultural Planning in Rajasthan.

## APPENDIX III

Minutes of the Adjourned meeting of the Board of Studies in Economic Administration and Financial Management held on November 9, 1979 in the Vice-Chancellor's Secretariat, University Campus, Jaipur.

## Present :

1. Professor Om Prakash, (Convener)
2. Shri P.N. Mathur,
3. Shri M.L. Verma,
4. Shri R.S. Agarwal,
5. Dr. N.K. Sharma,  
(Shri K.K. Mahrishi and Dr. M.D. Sharma, could not attend the meeting).

1. Courses for the optional group "Co-operation" introduced in the M.Com. (E.A.F.M.) were approved as per Appendix 'A'.

2. It was resolved to recommend that a Seminar on Cooperation and Rural Development be organised at the University level as a preparation for the introduction of the courses referred to in Resolution No. 1 above.

3. The following book be added in the list of Books recommended for B.Com. Third Year ( Banking Law and Practice ) :—

"G.N. Sharma and Mali Ram : *Banking Vidhi Evam Vyavhar*"

4. *It was resolved to recommend that* another meeting of the Board be convened to complete the following work in hand :—

- (a) Hindi translation of prescribed courses: and
- (b) Details of the Job-oriented courses noted below :
  - (i) Small Scale and Agro Industries.
  - (ii) Project Planning and Infrastructure Management and
  - (iii) Development Banking & Investment Decisions.

5. The meeting ended with a vote of thanks to the Chair.

Sd/-  
Convener.

## APPENDIX 'A'

(Ref. Res. No. 1 of the Minutes of the *djoured meeting* )

## M.Com. (E.A.F.M.) in Cooperation

(1) *Compulsory Papers* (as already approved)

- I. Economic Analysis
- II. Principles and Practice of Economic Administration
- III. Principles of Financial Management.
- IV. Management and Management Accountancy.

(2) *Optional Papers* :

- V. Co-operative thought and Legal Frame-work.
- VI. Co-operative Environment and Rural Developemnt.
- VII. Co-operative Management and Control.
- VIII. Co-operative Project Planning.
- IX. Co-operative movement in India and Abroad.
- X. Quantitative Teachinques  
(syllabus already approved)
- XI. Dissertation (case study of an  
approved Co-operative Institution).

*N.B.* : A candidate will be required to offer paper No V and any three others (subject to the usual requirements regarding dissertation).

(3) *Viva-voce* :

## Co-Operative thought and legal frame-work :

Philosophy of co-operation-General aims, Basic Principles, Cooperation vis-a-vis capatalism, Socialism and Socio economic systems.

2. Origin and Development of Co-operative Thought- Robert Owen's Role, Rochdale Pioneers, The Christian Socialists.
3. Principles and Characteristics of Raiffeisen Societies and Schultz-Delitzsch Societies.
4. Co-operative Thought in Ancient India-Kautilya's Arthastra. Village Communts in Ancient India.
5. State and Co-operative Movement.
6. Evolution of Credit and non credit multipurpose Co-operative Societies.

7. Co-operative Legislation in India. Historical Development of Legislation, Co-operative Societies Acts of 1904, 1912 as amended upto date.

Main findings of Committee on Co-operative Law, 1956 (S.T. Raja Committee).

8. Co-operative Legislation in Rajasthan, A Detailed Study of the Rajasthan Co-operative Societies Act, 1965 as amended upto date.

*Books and Reports :*

CR Fay-Co-operation at Home and Abroad.

H. Calvert : The law and Principles of Co-operation

Peer Warbasse : The co-operative Way.

Kulkarni : Theory and Practice of Co-operation.

B.S. Mathur-Co-operation in India, (In Hindi)

Report of the Committee on Co-operation-Mirdha Committee.

Report of the Committee on Co-operative Administration, 1963.

Review of Co-operative Movement in India-R.B.I. Publication.

Report of the Working Group on Co-operatives, 1973, (National Co-operative Union).

Report of the Committee on Co-operative Marketing, 1964 (M.L. Dantwala).

Co-operative Societies Act.

Rajasthan Co-operative Societies Act, 1965.

**Paper VI Co-operative Environment and Rural Development :**

1. Meaning and Significance of Co-operative Environment Co-operative Democracy Co-operation as embalancing factor between Public and Private Sectors.
2. Main characteristics of Rural Indian Economy and Social Structure.
- 2A. Development of Agriculture and Co-operative farming.
3. Problems of Agricultural marketing storage and warehousing role of Co-operatives.

4. Theory and Practice of Economic Planning for Rural India with special reference to Rajasthan-Antyodaya and food for work.
5. Role of Reserve Bank of India and other financial institutions set up at the national/Rajasthan level for supporting Co-operative movement and role of the State. Rural Industrial Projects. their organisation.
6. Need for their development, tiny sector, small scale sector and the cooperative sector—Findings to various Rural Credit and other surveys.
7. A study of National Co-operative Development Corporation (NCDC) Khadi and Village Industries Commission.
8. Panchayati Raj and Democratic Decentralisation.
9. Integrated Rural Development-Concept and features in India—NES and Country Development programme, Industrial Policy of December, 1977.
10. Urban Co-operative Development Schemes.
11. Workers' Co-operative Productive Society, Consumers' Co-operatives, Housing Cooperatives, Industrial and Processing Cooperatives.

*N.B.* : Items 1, 5, 7, 10 and 11 may constitute group A, while the rest may constitute group B.

#### *Books and Reports :*

1. James Peter Warbase : Co-operative Democracy
2. Co-operation in India—Govt. of India
3. All India Rural Credit Review Committee Report, 1969.
4. Working Group on Industrial Co-operatives, 1966.
5. Report of the Co-operative Planning Committee.
6. All India Rural Credit Survey Committee Report, 1951—54.

#### **Cooperative Management and Control :—**

##### **A. Co-operative Management :**

- (i) Co-operative organisations as commercial institutions  
Need for professional management. its limitations.

- (ii) Present trends in Management of co-operative organisations—deofficialization, democraticization decentralization, delegation of authority and span of supervision.
- (iii) Education of Members and training of personnel present position and scope for improvement management cadre.
- (iv) Application of principles of management in Co-operative organisations—motivations, planning, co-ordination decision making.
- (v) Role of Govt./offices.

#### B. Co-operative Control :

- 1. Control techniques : Performance Budgetting, efficiency Audit, Management Audit, Social Audit, and Annual Audit and Inventory control.
- 2. Control of over dues and Embezzlements.
- 3. Cooperative Accounting—Main Books of Accounts maintained by (i) Co-operative Credit Societies (ii) Co-operative Marketing Societies (iii) Co-operative Consumers Stores and (iv) Co-operative Housing Societies.
- 4. Co-operative Audit : Concurrent Audit and Final Audit, Duties, Power and liabilities of auditors Audit fees add audit funds and audit report.
- 5. Inspection of co-operative societies—  
(i) Departmental, (ii) R.B.I. and (iii) District and Apex Societies.

#### *Books recommended :*

- 1. B. Tellow : Cooperative Auditing.
- 2. Calvert : The Law and Principles of Co-operative
- 3. I.L.O. : Co-operative Organisation.
- 4. Stephenson : Management of Co-operative Societies.
- 5. Co-operative Management—Report of the Regional Seminar held in the Philipines I.C.A.
- 6. Studies in Management—Guy Hunter.
- 7. I.C.A. Co-operative Management

8. Krishnaswami O.R.—Principles and Practice of Co-operative Audit.
9. Khandelwal M.C.—Co-operative Audit.

**Paper VIII—Co-operative Project Planning :**

1. Definitions of Project—Identification, Need and Importance of Co-operative Project Planing.
2. Plan Formulation—Scrutiny, finalisation, Implementation, Evaluation and Follow up.
3. Selection of locations—Theories of location Plan Lay out Selection of production technique.
4. Procedure and formalities of registration of projects.
5. Project financing—Internal and External resources.
6. Costing, Pricing and Profit consideration—Cost estimate, fixation of price, marketing channals and profit Management.
7. Specific problems of material and Inventory management.
8. Co-operative Projects.

**References :—**

1. Complete guide of Project Management—Dennis A Caliners Management Guide Book, U.S.A., 1968.
2. Production Management, H.N. Broom, D.B. Taraporewala Sons Co. Private Ltd., Bombay., 1971.
3. Co-operative Law in India—M.D. Vidwans. Committee for Co-operative Training (N.C.U.I.) New Delhi, 1969.

**Paper IX—Co-operative Movement in India and Abroad :**

*Section 'A'*

1. Evolution of Co-operative movement in India—Co-operative movement before Independence Co-operatives during the Plans.



2. Organisation of the Co-operative Credit Movement. Short term-medium—Long term Credit Societies. Primary Agri. Credit Society, Central Co-operative Banks, State Co-operative Banks, and Land Development Banks.
3. Organisation of the Non-credit Co-operative Movement :
  - (a) Co-operative.
  - (b) Consumer Co-operative Stores.
  - (c) Industrial Co-operative Societies.
  - (d) Housing Co-operative Societies.
  - (e) Products Co-operatives.
4. Critical Evaluation of following Apex Co-operative Organisations :
  - (a) National Co-operative Union of India.
  - (b) All India State Co-operative Banks Federation.
  - (c) Federation of Co-operative Marketing.
5. Co-operative movement in Rajasthan—History Organisation and working of Co-operatives. Draw-back of development of Co-operative movement in the State—Suggestions.

#### *Section 'B'*

6. Distinctive features of creatives in capitalist and Socialist countries.
7. Co-operative movement in U.S.S.R.
8. Co-operative movement in Denmark, Sweden, Norway.
9. Co-operative movement in Britain, W. Germany, and Japan.
10. Special study of the following organisations :—

#### *Books :*

1. Co-operative Movement in India by L.M. Hough.
2. Recent trends in Co-operative Movement in India by R.B. Tyagi.

3. Co-operatives in India by Dr. B.S. Mathur.
4. Co-operatives in India and Abroad by Cunsal.
5. Annual Report of Co-operative Deptt., Govt. of Rajasthan.
6. Important Statistics relating to Co-operative Movement, Co-operative Deptt., Govt. of Rajasthan.
7. Bulletins of International Co-operative Alliance.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN MEDICINE AND PHARMACEUTICS HELD ON  
THE 21ST AND 22ND DECEMBER, 1979 AT 12.00  
NOON IN THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. M.K. Patni (Convener)
  2. Dr. P.Chaterji,
  3. Dr. S.P. Moongia,
  4. Dr. S.K. Sharma,
  5. Dr. B.L. Asawa,
  6. Dr. M.L. Sharma,
  7. Dr.C.K. Joshi
  8. Dr. Shurvir Singh (External Member)
- Dr. (Mrs.) S. Saxena )  
Dr. S.K. Pandey ) Special Invitees.

N.B. : Dr. (Mrs.) Sheela Sharma, Jodhpur, Dr. M.R. Jain Udaipur and Dr. R.K. Pathak, Jaipur (External Member) could not attend the meeting.

1. The Board unanimously *appointed* Dr. P. Chaterji, Prof. and Head of the Deptt. of E.N.T., S.P. Medical College, Bikaner as a member other than the Convener of the B.O.S. to serve on the Committee for the selection of Examiners for the session 1979-80 under Section 34 (4) (iv) of the University Act.

The Board further *appreciated* the services rendered by the outgoing member of the selection of Examiners Committee Dr. M.L. Sharma, Prof. and Head of the Deptt. of Pathology, S.M.S. Medical College, Jaipur.

2. The Board aftergoing through the reports of examiners and question papers set for the examinations of 1979, *observed as under* :—

- (i) The contents of the examiners reports *be noted*.
  - (ii) Regarding Final M.B.B.S. Obstetrics and Gynaecology Family Planning and Nutrition paper, the paper setter of Section-B be requested to set the paper within the prescribed syllabi.
  - (iii) In view of the performance of the students stated to have been reported by the examiners, the principals of the affiliated colleges be informed that more emphasis be given on clinical and practical aspects.
- (3) The Board considered a proposal received from Dr. R.P. Chaturvedi (Dean, Faculty of Medicine and Pharm.). Principal, J.L.N. Medical College, Ajmer regarding the period of registration as well as of the examination of students at the various post graduate diploma courses in the Faculty of Medicine as contained in his letter No. 23308/PA/1/Dean/Vol.1/79, dated the 18th September, 1979 (Vide. Appendix-I).

*Resolved to recommend* that in order to avoid disparity between the provisions of the M.D./M.S. and Post-graduate Diploma Courses, the following consequential amendments *be made* to O.278-G of the University Hand Book Part II so as to bring the provisions of registrations and examinations of the students of post-graduate diploma courses at par with the M.D./M.S. courses :

I. O.278-G-I :

Sub-clause 4 of Clause-I of O.278-G *be amended* so as to read as follows :—

- 4. The examinations of Post-graduate diploma courses will be held twice a year with an interval of 4 to 6 months ordinarily in the month of May and December.

Candidates shall not be permitted in more than two examinations in a year with an interval

of 4 to 6 months in case of the postponement of the examinations. The students appearing at the postponed examinations shall be governed with the same syllabus and the scheme of Examinations as applicable to the original examination.

## II. O.278-G-III and O.278-F-II :

The existing sub-clause (a) appearing under clause III of O.278-G and Clause II of Ordinance 278-F of the University Hand Book Part II *be amended* so as to read as follows :—

- (a) Selection for Post-graduate diploma courses in the various specialities shall be done strictly on merit judged on the basis of the academic record in the under-graduate courses out of those applicants who fulfil the above mentioned prerequisites. These selections would be done by a selection committee consisting of the Head of the Institution and the various guides in the subject/speciality concerned. The selection of post-graduate students in a calendar year should be done when the regular batch of students completes one year's House job. Vacancies, if any, may be filled up in the month of December of the same year.

*Notes :* 1. Academic Record in the Under-graduate courses means the performance of the candidates at the First, Second and Final M.B.B.S. Examinations taken together.

2. The registration may be counted from the date the candidates completed his/her twelve months house-

manship or equivalent thereof subject to the condition that the candidate was working as Registrar/ Whole time post-graduate in the subjects/specialities.

### III. O.278-C :

Clause 6 of O.278-C of the University Hand Book Part II *be amended* so as to read as under : —

“The examinations of D.M., M.CH.M.D., M.S. AND M.Sc. (Med.) will be held twice a year with an interval of 4 to 6 months ordinarily in the month of May and December.

Candidates shall not be permitted in more than two examinations in a year with an interval of 4 to 6 months in case of the postponement of the examinations. The students appearing at the post-graduate examinations shall be governed with the same syllabus and the scheme of the examinations as applicable to the original examination.

The Board further *resolved to recommend* that the booklet containing the provisions and detailed syllabi should specifically indicated the year of its applicability on the cover page.

(4) The Board considered amending the courses of study and the provisions of the University Hand Book Part II relating to the Under-graduate Medical curriculum in the light of the recommendations of the Medical Council of India duly approved by the Central Government under Section 33 of the Indian Medical Council Act, 1956 received from the Under-secretary Medical Council of India vide his letter No. MCI. 26 (3)/79-Med/17058 dated the 19th October, 1979 (*Vide Appendix-II*).

After a good deal of deliberations and in view of the implications with regard to implementing the aforesaid menda-

tory provisions, the Board *resolved to recommend* that the recommendations received from the Medical Council of India, *be approved* for application with effect from the admissions to be made at the First M.B.B.S. course during the session 1980-81.

The Board further resolved *to recommend* that the following consequential amendments be made to the provisions as contained under O.272 of the University Hand Book Part-II :—

**O.272 :**

I. Sub-clause (ii) (b) of clause 'II-Eligibility for admissions' *be amended* so as to read as follows :—

- (b) He has passed B.Sc. Examination of an Indian University recognised for the purpose by the Syndicate; with not less than two or more subjects mentioned earlier viz. physics, Chemistry, Biology (Botany and Zoology); if he had passed the First year of the three year degree course/ pre-professional/pre-medical course/Intermediate Examination with the subject of Physics, Chemistry, Biology both in theory as well as in practical and English; and

Provided also that a candidate for admission to the Medical course must have obtained not less than 50% of the total marks in English and Science subjects taken together either (i) at the qualifying examination (or at a higher examination) in the case of medical colleges where the admissions are made on the basis of marks obtained at these examinations or (ii) 50% of the total marks in English and Science subjects taken together at the competitive entrance examinations where such examination are held for selection.

- II. The note (ii) beginning with the words 'Natural born scheduled caste' and ending with the words 'as the case may be' given under sub-classe (b) of O.272 II (ii) *be amended* so as to read as follows :

- (ii) For Natural born scheduled caste and scheduled tribe candidates the minimum marks required at the qualifying examination or in the pre-medical test; as the case may be shall be 40% instead of 50% (for general candidates).

Where the seats reserved for Scheduled Caste and Scheduled tribes students in the state can be filled for want of requisite number of candidates fulfilling the minimum requirements prescribed for the state, than the vacant seats be filled up on all India basis with Scheduled Castes and Scheduled Tribes candidates getting not less than the aforesaid minimum prescribed pass percentage.

- III. The words beginning with 'The first 18 months..... Pre-clinical subjects' appearing under sub-clause I of clause 'IV-Duration of the course' of Ord. 272 *be reworded* so as to read as follows :

"The first 18 months shall be occupied in the study of the phase I (pre-clinical) subjects and no students shall be permitted to join the phase II (paraclinical/clinical) group of subjects until he has passed in all the phase I (pre-clinical) subjects for which he will be permitted not more than four chances (actual examination).

- IV. The heading 'Pharmacology including Pharmacotherapeutics and Toxicology' given on page 57 *be substituted* by the following :—

'Pharmacology : including Pharmacotherapy and toxicology of drugs and study of drugs in Indian



harmacopea and introduction of clinical pharmacology'.

- V. The following *be inserted* on page 62 just below the heading '3 Forensic Medicine' :—

"Forensic Medicine :—This course shall include forensic Toxicology, instruction in the duties which devolve upon practitioners in their relation to the State, and on the generally recognised rules of medical ethics. If possible, batches of students may be taken by teachers when they are on court duties to introduce them to the elements of legal aspects of medicine.

The records of such examinations should be made available to the Council, if and when required and the records of assessment may be retained till six months after the candidate finishes his course of training.

(5) Arising out of the discussions made under foregoing Res. No. 4, the Board resolved that (i) a clarification be obtained from the Medical Council of India, New Delhi about the modus operandi of scheduled castes and scheduled tribes candidates, in case of the seats are not filled in as sufficient number of candidates qualifying the competitive examination, (ii) in order to adhered to the mandatory requirement of courses of study of Forensic Medicine regarding retaining the records of assessment in the college till 6 months after the candidate finishes his course of training, a reference be made to the various Principals of the colleges affiliated with the University in the Faculty of Medicine to provide proper facilities so that the aforesaid requirements of the M.C.I. could be implemented, and (iii) in order to adhere to the mandatory requirement of the Medical Council of India the aforesaid recommendation No. 4 of the Board of Studies together with a copy of the mandatory recommendations received

form the Medical Council of India be forwarded to the State Government for further necessary action.

(6) The Board *noted* the contents of letter No. ऋ. वि./79/8909, dated the 29/30th December, 1979 received from the Director, Bhasha Vibhag, Government of Rajasthan, Jaipur in respect of imparting instructions in the technical educations through the Hindi medium (*Vide Appendix-III*).

In this connection the Board in view of the mendatory nature of the provisions of medical Council of India *resolved* that the aforesaid letter be forwarded to the Medical Council of India, New-Delhi for consideration in its Executive Committee.

(7) The Board considered various letters received from Dr. G.M. Mathur, J.L.N. Medical College, Ajmer, Dr. C.K. Joshi, S.P. Medical College, Bikaner, Dr. T.P. Jain, S.M.S. Medical College, Jaipur and Rameshwar Sharma, Principal, S.N. Medical College, Jodhpur, all heads of the Departments of Community Medicine in respect of adoption of the old scheme of examination in the subject of Preventive and Social Medicine (Community Medicine) viz. there should be a separate paper at the Final M.B.B.S. examination instead of a separate paper at the Second M.B.B.S. and teaching in all the three phases in First, Second and Final M.B.B.S. taken together.

In this connection the Board also noted (i) the Contents of D.O. letter No. 12012/10/78-ME (P) dated the 30th September 79 addressed by Shri Raby Ray, Hon'ble minister of health and family welfare, Government of India, New Delhi to Dr. Sushila Nayyar, President, Kasturba Health Society, Sevagram Wardha stating that the matter of inclusion of community medicine as an independent subject at the final M.B.B.S. Examination has been reconsidered by the Medical Council of India, and it has been decided that only those medical Colleges which have been holding the P.S.M. Examination in the Final year may do so till the Council reconsidering the matter and (ii) No such letter stated

to have been received in the University office from the Medical Council of India.

The Board, therefore, *resolved to recommend* that the status-quo be maintained for the present and a reference be made to the Medical Council of India in order to obtain a copy of the said letter and the matter be placed before the Faculty of Medicine and Pharm. for consideration.

(8) The Board considered the recommendations made by the following Medical Education and Research Committees at their meetings held on the dates noted against each :—

<i>Name of the Committee</i>	<i>Date</i>
1. Medicine and Allied Specialities	20.9.79
2. Surgery and Allied Specialities	20.9.79
3. Physiology	20 & 21.9.79
4. Obstetrics and Gynaecology	20.9.79
5. Ophthalmology and E.N.T.	21.9.79
6. Community Medicine	21.9.79
7. Pathology and Microbiology	22.9.79
8. Forensic Medicine	22.9.79
9. Pharmacology	22.9.79

*Resolved to recommend* that the recommendations of the aforesaid MERC's *be accepted* with the following modifications/observations :—

I. Medicine and Allied Specialities :—

(i) *Ref. : Resolution No. 3 (I) of the Committee :*

The books prescribed for Paper-I, Paper-II and Paper-III for the Final M.B.B.S. Examination be *accepted* as reference books and these be considered as addition to existing list.

(ii) *Ref. : Res. No. 3 (II) of the Committee :*

The books prescribed under the aforesaid recommendation *be not accepted*.

(iii) *Ref. : Res. No. 4 of the Committee :*

In this connection the Board observed that the Principals of the various Medical Colleges affiliated to the University be requested that the chapter on 'Malaria' be given more emphasis for the undergraduate courses.

II. *Surgery and Allied Specialities :—*(i) *Ref. : Res. No. 2 of the Committee :*

The Board after discussion at length on the issue from all its aspects, observed that the question of appointment of Professor of allied specialities with the required qualification to act as an internal examiner for Final M.B.B.S. Examination as well as Post-graduate Examination is an important issue, and therefore, it was *resolved that* a clarification be obtained from the Medical Council of India, New-Delhi and the matter be put up before Faculty of Medicine and Pharm.

III. *M.E.R.C. in Physiology :—*(i) *Ref. : Res. No. 3 (II) of the Committee in connection with the requirement of submission of a certificate from Head of the Department to the effect that the candidate has performed the experiments as listed in Annexure-B of above recommendation during his 2 year training after registration for the M.D. Physiology courses.*

*Resolved that it be not accepted* in its present form. However, the Board *resolved to recommend* that the list of experiments as given Vide Annexure-B of the aforesaid recommendation be circulated amongst the Principals of various Medical Colleges for its implementation.

(ii) *Ref. : Res. No. 4 of the Committee :*

In this connection the Board also considered the recommendation made by the Medical Education and Research Committee in Pharmacology vide its Res. No. 5, dated the 22nd September, 1979 in respect of the common scheme of the Examination and detailed syllabi for M.Sc. (Med.) Examination.

Regarding the unified scheme of Examination and detailed syllabi for M.Sc.(Med.) courses, the Board also noted Res. No. 7 (vi) dated the 23/24th November, 1977 of the Faculty of Medicine and Pharm. read with Res. No. 4 dated the 17/18th October, 1977 of the Board of Studies in Med. and Pharm.

*Resolved to recommend* that (a) statusquo be maintained for the present; (b) a Committee consisting of the following persons be appointed to examine the matter from all its aspects and to suggest the draft common sheme of examination and detailed syllabi for M.Sc. (Med.) examination in Anatomy, Physiology, Bio-chemistry and Pharmacology on the lines of the provisions of the Medical Council of India, New-Delhi :

1. Convener B.O.S. in Medicine (Convener)
2. Convener M.E.R.C. in Anatomy
3. Convener M.E.R.C. in Physiology
4. Convener M.E.R.C. in Pathology
5. Convener M.E.R.C. in Bio-Chemistry
6. Convener M.E.R.C. in Pharmacology

and (c) the committee may also suggest the consequential amendments in the existing provisions of O.278-F of the University Hand

Book Part II and placed its recommendation directly before the Faculty of Medicine and Pharmaceutics for consideration.

(iii) *Ref. Res. No. 5 of the Committee :*

It stands desposed off vide foregoing Res. No. 3 of these minutes.

IV. M.E.R.C. in Obstetrics and Gynacology :

(i) *Ref. Res. No. 2 of the Committee :*

In this connection the Board also gone through the revised panel of examiners and found that the panel comprising the names of the qualified persons is incomplete in respect of the designation, teaching experience and addresses of the persons concerned.

The Board, therefore, resolved that a letter be sent to the Convener, M.E.R.C. in Obstetrics and Gynaecology enclosing there with the revised panel of examiners in order to complete the required information in respect of the designations, teaching experience and addresses of the persons concerned.

(ii) *Ref. Res. No. 3 (I) (b) of the Committee :*

It be not accepted in view of the mandatory recommendations of the Medical Council of India.

V. M.E.R.C. in Ophthalmology and E.N.T. :

(i) *Ref. Res. No. 2 of the Committee :*

In this connection the Board after going through the revised panel of examiners request the University office to send a prescribed proforma to the external examiners in order

to obtain the complete information in respect of designation and teaching experience in the speciality/subject concerned.

#### VI. M.E.R.C. in Pathology and Micro-Biology :

##### (i) *Ref. Res. No. 3 (i) of the Committee :*

*It be not accepted* for the present in view of the mendatory recommendations of the Medical Council of India. However, the aforesaid recommendations of the Committee be referred to the Medical Council of India for its consideration in all the subjects.

##### (ii) *Ref. Res. No. 3 (II) of the Committee :*

The words 'only medical graduate are eligible' appearing after the heading 'M.D. (Microbiology)' be deleted.

#### VII. M.E.R.C. in Forensic Medicine :—

##### (i) *Ref. Res. No. 2 of the Committee :*

In this connection the Board noted the revised panel of examiners and the note of dissent given by Dr. B. L. Asawa (Convener M.E.R.C. in Forensic Med.) on thereof.

In view of the diversant recommendation of the Committee and difference of opinions of the members of the Board, the Board *resolved to recommend* that the Faculty may take a decision on the recommendation No. 2 of the Committee.

#### VIII. M.E.R.C. in Pharmacology :—

##### (i) *Ref. Res. No. 5 of the Committee :*

It stands disposed off vide foregoing Res. No. 8 III (ii).

(9) With reference to Res. No. 13, dated the 18th August, 1979 of the Faculty of Medicine and Pharmaceutics read with Res. No. 1 (viii), dated the 17th August, 1979 of the B.O.S. in Medicine, the Board considered the courses of Study and textbooks in the subject of Bio-chemistry for the following examinations together with the relevant additions and/or alterations to the Regulations, Ordinances and Statutes :—

1. First M.B.B.S. Examination, December, 1981.
2. M.D. Examination, December, 1982.
3. M.Sc. (Med.) Examination, December, 1982.

*Resolved to recommend* that the existing courses *be repeated* for the aforesaid examinations.

(10) The Board noted that the minutes of the meeting of the Medical Education and Research Committee in Anatomy dated the 21st September, 1979 has since not been received from the Chairman, Dr. R.P. Chaturvedi, Prof. and Head of the Department of Anatomy, J.L.N. Medical College, Ajmer.

*Resolved that* the recommendations of the Committee when received *be placed* before the Faculty of Medicine and Pharmaceutics directly for consideration.

(11) With reference to the Res. No. 4 of the Medical Education and Research Committee in Pharmacology, dated the 22nd September, 1979, the Board considered the recommendations made by the Committee at its meeting held on the 23rd October, 1979. (*Vide Appendix-IV*).

*Resolved to recommend* that the aforesaid recommendations of the committee *be accepted*.

The meeting ended with a vote of thanks to the Chair.

*Sd/-*

(Dr. M.K. Patni)

*Convener,*

B.O.S. in Medicine and  
Pharmaceutics.



Medicine and Pharmaceutics followed by detailed discussions in the meeting of the Faculty of Medicine and Pharmaceutics.

*Sd/-*

Dr. R.P. Chaturvedi

Dean

Faculty of Medicine and

Principal,

J.L.N. Medical College,

Ajmer.

## APPENDIX-II

(*Ref. Res. No. 4 of these minutes*)

Grams : MEDCONCIND, New Delhi.

Phone : 273184

No. MCI-26 (3)/79. Med./17058

From,

The Secretary,  
Medical Council of India,  
Temple Lane, Kotla Road,  
NEW DELHI.

To,

1. The Deans/Principals, All the Medical Colleges.
2. The Registrars, All the Universities.
3. The Directors of Medical Education/Health Services, All the States.
4. The Secretaries (Health Department), All the State Governments.
5. The Director General of Health Services, New Delhi.
6. The Director General of Armed Forces Medical Services, New Delhi.
7. All the Members of the Medical Council of India.

New Delhi-2, 19th October, 1979.

**Subject :** Amendments to the recommendations of the Medical Council of India on Undergraduate Medical Education Curriculum—Approval of Central Government u/s 33 of the Indian Medical Council Act, 1956.

Sir,

I am to state that the Central Government, vide their letter No. V. 11017/4/77-MPT/ME (Policy), dated 15th October, 1979 have approved certain amendments in Sections I, II, III, and VII of the Undergraduate Medical Curriculum which had earlier been approved by their letter No. V.11917/4/77-ME (P) dated 30th November, 1977 (Copies of which are already available with you) u/s 33 of the Indian Medical Council Act, 1956.

In forwarding herewith a copy of the Central Government letter noted above alongwith the Annexure containing the modifications as now approved by the Central Government as regulations u/s 33 of the Indian Medical Council Act, 1956, I am directed to request you to kindly take necessary steps to give effect to these revised regulations of the Medical Council of India on Undergraduate Medical Education with immediate effect.

I may state for your information that these as regulations u/s 33 ibid have become mandatory.

Kindly acknowledge receipt.

Yours faithfully,

*Sd/-*  
U.B. Krishnan  
*Secretary.*

Copy of letter No. V. 11017/4/77-MPT/ME (Policy) dated 15th October, 1979, from Shri K.L. Bhatia, Under-Secretary to the Government of India, Ministry of Health and Family Welfare (Department of Health), New Delhi to the Secretary Medical Council of India, Temple Lane, Kotla Road, New Delhi.

*Subject:* Amendment to the recommendations of the Medical Council of India on Undergraduate Medical Education Curriculum-Approval of Central Government under section 33 of the Indian Medical Council Act, 1956.

I am directed to refer to the correspondence resting with your letter No. MCI-26 (3)/79-Med./1666, dated the 12th April, 1979 on the subject cited above and to say that the recommendations under section II para (e) have been reconsidered and modified. I am now to convey the final approval of the Government of India under section 33 of the Indian Medical Council Act, 1956 to the amendements in the recommendations of the Medical Council of India on Undergraduate Medical Education Curriculum in sections I,II,III,VIII as indicated in the annexure of this letter. Please acknowledge the receipt.

## Section I

*Clause (d) :—*“B.Sc. examination of an Indian University provided that he has passed the B.Sc. examination with not less than two of the following subjects-Physics, chemistry Biology (Botany, Zoology) and further that he has passed the earlier qualifying examination with the following subjects, Physics, Chemistry, Biology and English.

*Clause (e) :—*Under-“Admission to Medical Course” appearing on page 4 may be amended as follows :—

“The Higher Secondary Examination or the Indian School certificate Examination which is equivalent to 10+2 Higher Secondary Examination after a period of 12 years study, the last two years of study comprising of Physics, Chemistry Biology and Mathematics or any other elective subject with English at a level not less than the Core Course for English as prescribed by the National Council for Education Research and Training, after the introduction of the 10+2+3 years educational structure as recommended by the National Committee on Education.

*Note* :—Where the course content is not as prescribed for 10+2 education structure of the National Committee, the candidates will have to undergo a period of one year professional training before admission to the medical colleges.

## Section II

The selection of students to a medical college should be based solely on merit of the candidate and for determination of merit, the following criteria be adopted uniformly throughout the country :—

- (a) In States, having only one Medical College and one University/Board/Examining Body conducting the qualifying examination, the marks obtained at such qualifying examination be taken into consideration.
- (b) In States, having more than one University/Board/Examining Body conducting the qualifying examination (or where there are more than one medical college under the administrative control of one authority), a competitive entrance examinations should be held so as to achieve a uniform evaluation due to the variation on the standard of qualifying examinations conducted by different agencies.
- (c) Where there are more than one college in a State and only one University/board conducting the qualifying examination then a joint selection board be constituted for all the colleges.
- (d) A competitive entrance examination is absolutely necessary in the case of Institutions of All India Character.
- (e) To be eligible for competitive entrance examination, candidate must have passed any of the qualifying examinations as enumerated under the head-note "Admission to Medical Course."

Provided that a candidate who has appeared in a qualifying examination the result of which has not been declared, may be provisionally allowed

to take up the competitive entrance examination and in case of his selection for admission to a medical college, he shall not be admitted there to unless in the meanwhile he has passed the qualifying examination.

Provided also that a candidate for admission to the Medical Course must have obtained not less than 50% of the total marks in English and Science subjects taken together (i) at the qualifying examination (or at a higher examination) in the case of medical colleges where the admissions are made on the basis of marks obtained at these examinations or (ii) 50% of the total marks in English and Science subjects taken together at the competitive entrance examination where such examinations are held for selection.

Provided further that in respect of candidates belonging to Scheduled Castes/Scheduled Tribes the minimum marks required for admission shall be 40% in lieu of 50% for general candidates.

Where the seats reserved for Scheduled Castes and Scheduled Tribes students in any State cannot be filled for want of requisite number of candidates fulfilling the minimum requirements prescribed from that State, then such vacant seats may be filled up on all India basis with Scheduled Castes and Scheduled Tribes candidates getting not less than the minimum prescribed pass percentage.

The authorities (State Governments and Universities) should arrange special coaching classes for Scheduled Castes/Scheduled Tribes candidates before the qualifying/competitive examination to enable them to come up to the appropriate standard for admission to the Medical Course.

### Section III

The first 18 months shall be occupied in the study of the phase I (Pre-clinical subjects) and no students shall be permitted to join the phase II (paraclinical/clinical) group of subjects until he has passed in all the phase I (pre-clinical subjects)

for which he will be permitted not more than four chances (actual examination).

### Section VIII

2. Pharmacology : including pharmacotherapy and toxicology of drugs and study of drugs in Indian Pharmacopea and introduction of clinical Pharmacology.

The provision of curriculum content in forensic medicine, as appearing on page 12, may be modified as under :—

“Forensic Medicine :—This course shall include forensic Toxicology, instruction in the duties which devolve upon practitioners in their relation to the State and on the generally recognised rules of medical ethics. If possible batches of students may be taken by teachers when they are on court duties to introduce them to the elements of legal aspects of medicine.

“(C) The records of such examinations should be made available to the Council, if and when required, and the records of assessment may be retained till six months after the candidate finishes his course of training.

## APPENDIX—III

( Ref. Res. No. 6 of these Minutes )

पत्रांक संख्या भा०वि०/79/8909 दिनांक 29/11/79 निदेशक भाषा विभाग,  
राजस्थान, जयपुर से प्राप्त पत्र की प्रतिलिपि :

विषय :—तकनीकी शिक्षा के माध्यम के रूप में हिन्दी का प्रयोग

प्रसंग :—शिक्षा आयुक्त का पत्र क्रमांक: 8198 से 8002 दिनांक  
21/12/78.

महोदय,

राजस्थान के शिक्षा आयुक्त ने उपर्युक्त पत्र लिखकर आपसे यह निवेदन किया था कि आपके विश्वविद्यालय के अधीन चलने वाले चिकित्सा/इन्जीनीयरी आदि तकनीकी पाठ्यक्रमों में क्रमिक रूप से हिन्दी को वैकल्पिक माध्यम बनाने पर विचार करें। इस पर आपको उत्तर या अभिमत अथवा की गई कार्यवाही की जानकारी स्मरण कराने के बावजूद अब तक प्राप्त नहीं हुई है। इसी क्रम में यह निवेदन भी है कि तकनीकी विभागों में हिन्दीकरण की गति तीव्र करने के लिए राज्य सरकार ने प्रमुख सचिव श्री शेरसिंह जी की अध्यक्षता में एक विशिष्ट समिति का गठन किया है जिसकी प्रथम बैठक हाल ही में (दिनांक 12/11/79 को) सम्पन्न हुई है। तकनीकी विभागों में सम्पूर्ण हिन्दीकरण की दिशा में व्यावहारिक कठिनाई यह आती है कि तकनीकी शिक्षा के माध्यम के रूप में अभी हिन्दी का प्रयोग नहीं है। केन्द्रीय सचिवालय हिन्दी परिपद, नई दिल्ली ने भी इस ओर राज्य सरकार का ध्यान आकर्षित करते हुए सूचित किया है कि रड़की विश्वविद्यालय ने सन् 1981 में शुरू होने वाले सत्र से डिग्री स्तर की सभी इंजीनियरिंग कक्षाओं में हिन्दी का प्रयोग प्रारम्भ करने के लिए तैयारी की है। (प्राप्त पत्र की प्रति संलग्न है)।

निश्चय ही इसे शुभ प्रयास की संज्ञा दी जा सकती है। जो कार्य रड़की विश्वविद्यालय कर रहा है उसी पैटर्न पर या अपने यहां की परिस्थितियों के अनुकूल तकनीकी शिक्षा के विषयों में अध्ययन-अध्यापन के माध्यम के रूप में हिन्दी प्रयोग हेतु आप अपने विश्वविद्यालय में अध्ययन स्थिति का जायजा लेने की कृपा करें तो उचित होगा। हिन्दी भाषी प्रदेशों को ही यह शुभआत करनी चाहिए। इसके लिए वातावरण बन चुका है, पहल की आवश्यकता है। तकनीकी समिति का इसी क्रम में यह निवेदन है कि यदि एक साथ सारे पाठ्यक्रम में हिन्दी



को शिक्षण का या परीक्षा का वैकल्पिक माध्यम बनाना संभव न हो तो पहले प्रथम वर्ष में फिर ऊपर के विषयों में दूसरी शुरुआत की जाय । इन संभावनाओं का अध्ययन करने के लिए आप एक कर्मचारी दल का गठन करने की कृपा करें और उस दल को एक माह में अपनी रिपोर्ट देने का अनुरोध करें तो कृपा होगी ।

आशा है आप इस पर गंभीर पूर्वक विचार करेंगे और अपने अभिसत व की गई कार्यवाही से इस विभाग को अवगत कराने का कष्ट करेंगे ।

संलग्न :—परिपद का पत्र

भवदीय.

दि० 21/11/79,

ह०/-

(कलानाथ शास्त्री, निदेशक)

(सदस्य सचिव, तकनीकी समिति)

पत्र क्रमांक 8/13/199/ दिनांक 21 नवम्बर, 1979 केन्द्रीय सचिवालय हिन्दी परिपद एक्स वाई 68, सरोजिनी नगर, नई दिल्ली 110023 :

निदेशक,

भाषा विभाग

राजस्थान सरकार,

"सी स्कीम" दुर्गामार्ग,

जयपुर ।

विषय :— तकनीकी शिक्षा के माध्यम के रूप में हिन्दी का प्रयोग :

महोदय,

निवेदन है कि परिपद को यह जानकारी मिली है कि रड़की विश्व-विद्यालय सन् 1981 में शुरू होने वाले सत्र से डिग्री स्तर की सभी इंजीनियरिंग कक्षाओं में हिन्दी का प्रयोग शुरू करने के लिए तैयारी कर रहा है । विश्वविद्यालय में यह निर्णय किया जा चुका है कि 1981 से सभी स्तरों पर हिन्दी का प्रयोग शिक्षा के माध्यम के रूप में लागू कर दिया जाए । वैसे भी परिपद की जानकारी के अनुसार अब सिविल इंजीनियरिंग, विद्युत इंजीनियरिंग, यांत्रिक इंजीनियरिंग, और अन्य क्षेत्रों में अच्छी पुस्तकें हिन्दी में उपलब्ध हैं । केन्द्रीय लोक निर्माण विभाग द्वारा पुस्तकों की एक सूची तैयार कराई गई है जिसे विभाग के विभिन्न कार्यालयों में परिचालित किया गया है । केन्द्रीय हिन्दी निदेशालय ने भी वैज्ञानिक और तकनीकी विषयों की पुस्तकों की एक अद्यतन सूची तैयार की है जो उनके पश्चिमी ब्लॉक-7, रामकृष्ण पुरम नई दिल्ली 110022 कार्यालय से निःशुल्क मंगाई जा सकती है । वैसे भी परिपद को यह विश्वास है कि जब किसी कार्य को करने का निश्चय किया जाता है और उसको शुरू करने के लिए कदम उठाए जाते हैं तो देश में इतनी प्रतिभा और समन्वय है कि उस निर्णय के कार्यान्वयन के लिए अनेक लोग खड़े हो जाते हैं और व्यवसायिक स्तर पर भी पुस्तकों आदि के अभाव को दूर करने के लिए, चाहे धन कमाने के भाव से ही सही, किन्तु अनेक ऐसी एजेंसियां तैयार हो जाती हैं । ऐसी स्थिति में यदि राजस्थान सरकार और अन्य हिन्दी-भाषी राज्य सरकारें इस दिशा में निर्णय कर लें और सत्र 1981 से रड़की विश्वविद्यालय की तरह ही इंजीनियरिंग आदि की शिक्षा के माध्यम के लिए हिन्दी को अपनाने का निर्णय कर लें तो इस मार्ग में आने वाली बाधाएं शीघ्र दूर होनी शुरू हो जाएंगी । वैसे भी कोई भी कार्य बिना बाधा के शुरू तो नहीं किया जा सकता । जैसे राजस्थान सरकार द्वारा

अंत्योदय कार्यक्रम लागू करने में भी अनेक कठिनाइयां आई हैं और आती रहेंगी, इसी प्रकार इस कार्यक्रम में भी आने वाली कठिनाइयां दूर होती जाएंगी ।

इस वारे में आप जो कार्यवाही करें, उससे परिषद् को भी अवगत कराने का कष्ट करें ।

भवदीय

ह०/-

महेश चन्द्र गुप्त

प्रवन्ध मंत्री

## APPENDIX IV

(Ref. Res. No. 11 of these minutes)

Minutes of the meeting of the Sub-Committee appointed by MERC in Pharmacology held on 23.10.1979.

A meeting of Sub-committee appointed by the MERC in Pharmacology was held on 23rd October, 1979 at 12.00 Noon in University Office to go through the Course content, syllabus, Examination scheme etc. in toto for the Diploma in Pharmacy. The following were present :—

1. Dr. S.K. Sharma, *Convener.*
2. Dr. N.K. Gurbani.

It was further decided that minutes be also concurred by the other members of the Sub-Committee (Prof. F.S.K. Barar and Prof. K.P. Singh). Following points are recommended :—

1. In the Ordinance 278H (I), the word Supplementary be replaced by "II Regular" examination for that academic year and a Sessional examination be held at least 15 days prior to this "II Regular" examination (c.f. Rule R. 24A for the Faculty of Medicine)

*Note* :—University may be requested to declare the result in 15 days from the receipt of marks-list.

2. Last sub-para of para IV of O.278 H may be reworded as follows already recommended by M.E.R.C. in Pharmacology held on 22nd September, 1979 (Resolution No. 4):—

"A student who fails in the main examination for Diploma in Pharmacy may, at his option, take the examination in parts, in one or more subjects in which he has failed, or in whole on the condition that he passes in all the subjects prescribed for the examination in three consecutive examinations or within a period of two years, including the examination at which he first appeared. If he does not pass the full examination within period of two years as mentioned above, he shall have to take the whole examina-

tion in all the subjects at the time when he next appears at the examination."

3. (A)- Dr. Gurbani was desired to obtain plan and Scheme of examination as prevalent in one or two other places so that necessary modification if any on the notes (i)-(iv) appearing on page xxxv of the syllabus as well as division of paper between internal and external is finalised by M.E.R.C. in Pharmacology.
3. (B) It was further felt that Diploma in Pharmacy should be considered at the most as an undergraduate course and system of grace marks should be the same as adopted by this University for the degree of MBBS. Diploma in Pharmacy should not be confused with the post-graduate Diploma in the faculty of medicine like DCH; DPH; D.A.; DMRD/T etc.
4. Dr. Gurbani pointed out that at one time the question paper, set and evaluated by the External Examiner, was of too high a standard as compared to the standard stipulated in syllabus by the prescribed textbooks. The Sub-Committee agreed on this and it was requested that the University office on this may send a note to the paper setter and examiner that question paper and its evaluation should be done according to the level expected from the prescribed text Books.
5. The Sub-Committee felt that the panel of examiners for Diploma in Pharmacy may also be sent to MERC in Pharmacology for updating it.

*Sd/-Dr. S.K. Sharma*  
*Sd/-Dr. F.S.K. Barar*  
*Sd/-Dr. K.P. Singh*  
*Sd/-Dr. N.K. Gurbani.*

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN MEDICINE AND ALLIED SPECIALITIES HELD ON THE 2<sup>th</sup> SEPTEMBER, 1979 IN THE UNIVERSITY OFFICE (VICE-CHANCELLOR'S SECRETARIAT), JAIPUR.

Present :

1. Dr. (Mrs.) S. Saxena (Convener)
2. Dr. Ramawatar Sharma
3. Dr. S.N. Mishra
4. Dr. N.K. Mathur
5. Dr. R.D. Singh
6. Dr. H.K. Bedi
7. Dr. K. Banerjee.

(1) Under Statute 42-E (4) (iii) of the University Hand Book Part II, Dr. (Mrs.) S. Saxena Prof. and Head of the Department of Paediatric Medicine, S.M.S. Medical College, Jaipur *appointed* as convener of the Medical Education and Research Committee for the fresh term of three years ending on the 16th August, 1982.

(2) The Committee noted that there is no statement of qualifications and teaching experience etc. of teachers in the affiliated Medical Colleges and other Universities were supplied by the office even in the meeting itself. However the Committee taking into consideration the (i) revised qualifications for the appointment of examiners at the Post-graduate degree as contained in Ordinance 278-C of the University Hand Book Part II (amended to date) and (ii) revised qualifications for the appointment of examiners at the undergraduate examination as contained in Ordinance 272 (x) of the University Hand Book Part II (amended to date) revised the existing panel of examiners.

(3) The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes :—

I. Final M.B.B.S. Examination, December, 1984 :

(i) The following books be prescribed in the syllabus of Paper-I (General Medicine) :—

1. Text book of Medicine : Davidson 1977  
E.L.B.S. Rs. 60.00
2. Emergencies in Medical Practice :  
Dr. S.P. Gupta, 1977 Vikas Rs. 20.00
3. Physical Signs in Clinical Medicine Noble  
Chamberlain, 1975 ed. E.L.B.S. Rs. 70.00
4. Clinical Methods-Hunter, 1975 E.L.B.S.  
Rs. 15.00
5. Cecil And Lobb—Text Book of Medicine,  
1979 Igokushion Rs. 235.00

(ii) The following books be prescribed under paper II :—

1. Skin Disease by Roxburgh, 1977 E.L.B.S.  
Rs. 54.00
2. Text-book of Tuberculosis—Dr. K.N. Rao  
Vikas. New edition in press

(iii) The following books be prescribed under paper-III :—

1. Essentials of Pediatrics's—O.P. Ghai 1977  
Ed. Sagar Rs.50.00
2. Text book of Pediatrics—Satya Gupta  
1977 ed. Vikas Rs. 50.00
3. Ellis—Diseases of Infancy and Childhood  
1975 E.L.B.S. Rs. 75.00

## II. M.D. Examination, December, 1982 :

(i) The following books be prescribed in the syllabus of M.D. (General Medicine) :—

1. Conybear's Text Book of Medicine 1975 ed.  
Churchill Rs. 294.00
2. Clinical Method's—Hunter 1975 ed. E.L.  
B.S. Rs. 15.00
3. Price-Principles and Practice of Medicine  
1978 E.L.B.S. Rs. 145.00
4. Harrison's—Internal Medicine 1977 Kago  
Kusher Rs. 222.00
5. Ceil and Lobb—Text Book of Medicine  
1979 Igokushion Rs. 235.00

(ii) The following books be prescribed in the syllabus of M.D. (Paediatrics) :—

1. Nelson—Text Book of Pediatrics. 1979,  
Saunders Rs. 342.00
2. Manual of Peadiatric Physical Diagnosis-  
Lewis A. Barnes 1972, year Book Medical  
Publisher—Chicago
3. Neonatal Emergencies and other problems  
John-Black 1972, Butterworth and Co.
4. Care of the newborn-Meharban Singh M.D.  
1979 ed. 2nd Sagar Rs. 40.00

(iii) The following books be prescribed in the syllabus of M.D. (Psychiatry) :—

1. Reference Book :  
Freedman-Comprehensive text book of  
Psychiatry 1977 ed. W.W. Rs. 900.00
2. Text Book :  
Mayor-Gross-Clinical Psychiatry 1977  
Ed. B.T.C. Rs. 225.00



(iv) The following books be prescribed in the syllabus of M.D. (Radiology) :—

1. Text Book of Radiology—Sutton 1977 Ed. Churchill Rs. 736.00
2. Shank's-X-Ray Daignosis 6 Vols. Lewis Rs. 1564.00
3. Fletcher's Radiotherapy-1977 Ed. Lea-Febiger Rs. 340.00

(4) The Committee considered the letter No. MCI 26 (2)/79-Med/6246, dated the 17th May, 1979 recieved from the Secretary, Medical Council of India, Temple Lane, Kotla Road, New Delhi regarding inclusion of a regular detailed chapter on "Malaria" in Medical Under-graduate Courses (Vide-Appendix-I)

*Resolved to recommend* that the Chapter on "Malaria" has alrady been prescribed in the Under-graduate courses.

(5) The Committee considered the plan of thesis of the following candidates who have applied for registration of the subject of their thesis for the examination mentioned against each :—

1. Dr. Tej Pratap Gupta	M.D. (General Med-
2. Dr. S. Krishnana	cine)
3. Dr. Ramesh Kumar Sharma	"
4. Dr. Laxman Singh Sorala	"
5. Dr. Laxmi Chand Sharma	"
6. Dr. Hari Narain Meena	"
7. Dr. Devendra Kumar Gupta	"
8. Dr. Chandra Shekhar Baid	"
9. Dr. B.L. Sharma	"
10. Dr. Bal Krishna Agrawal	"
11. Dr. Arvind Gopal Kamithan	"
12. Dr. (Miss.) Amita Saxena	"
13. Dr. Sushil Jain	"
14. Dr. Surjeet Saluja	"
15. Dr. Harish Chandra Agrawal	"
16. Dr. Charanjeet Bharara	"
17. Dr. Neel Ratan	"

18. Dr. Harjinder Bir Singh	"
19. Dr. Basanti Lal Chobisa	"
20. Dr. Ajay Bhargava	"
21. Dr. Anant Kumar Gupta	"
22. Dr. Ajit Kumar Tilwani	"
23. Dr. Vinod Kumar Gupta	"
24. Dr. Pradumn Kumar Sharma	"
25. Dr. Triloki Nath Khandelwal	M.D. Radiology
26. Dr. Om Prakash Garg	"
27. Dr. Govind Narain Purohit	"
28. Dr. Gyan Chand Mathur	"
29. Dr. Nirmal Kumar Jain	M.D. (Respiratory
30. Dr. Narendra Chauhan	Disease and Tuber-
31. Dr. Bhanwar Lal Khandelwal	culosis)
32. Dr. Prabhu Das Motini	"
33. Dr. Shanti Kumar Luhadia	"
34. Dr. Prahlad Rai Gupta	"
35. Dr. Chandra Kanta Sachdeva	M.D. (Anaesthesiology)
36. Dr. Srita Singhal	"
37. Dr. Ganga Shankar Garg	"
38. Dr. Surendra Nath Joshi	M.D. (Paediatrics)
39. Dr. Ashok Kumar Garg	"
40. Dr. (Mrs.) Navita Saini	"
41. Dr. Sujata Gupta	"
42. Dr. Narendra Kumar Rungta	"
43. Dr. Madhu Gupta	"
44. Dr. Kishori Lal Sihra	"
45. Dr. Rama Shankar Asopa	"
46. Dr. Ashok Kumar Bansal	"
47. Dr. Achala Chandra	"

*Resolved that the proposed plans of the aforesaid candidates be accepted.*

The meeting ended with a vote of thanks to the Chair.

*Sd/-*

Dr. (Mrs.) S. Saxena  
Convener.

No. MCI-26 (2)/79-Med./4676

From :

The Secretary,  
Medical Council of India,  
Temple Lane, Kotla Road,

To,

The Deans/Principals,  
All the Medical Colleges in India.

New Delhi, 2, dated the 30th April, 79

*Subject :* Inclusion of a regular detailed chapter on  
Malaria Medical Undergraduate courses.

Sir,

I am enclosing herewith a copy of letter No. T. 14020/1, 79-MAL, dated the 19th April, 1979, received from the Director to the Government of India, Ministry of Health and Family Welfare (Department of Health), New Delhi, on the Subject noted above for information and necessary action.

Yours faithfully,

Sd/-  
(U.B. Krishnan)  
Secretary.

Encl. As above.

End. st. No. MEL-26 (2)/79-MEd./4782      Dated : the 30th April, 79.

Copy forwarded for information and necessary action to :

1. The Secretaries (Health Departments.) All the State Government.
2. The Directors of Medical Education and Research/ Medical and Health Services, all the States.

3. The Director General of Health Services, New Delhi.
4. The Director General of Armed Forces Medical Services DHO PO, New Delhi.
5. The Secretary to the Government of India, Ministry of Health and F.W. (Department of Health), New Delhi in reference to his letter No. T 14020/1/79-MAL, dated 19th April, 79.

*Sd/-*  
(U.B. Krishnan)  
Secretary

No.T. 14020/1/79-MAN.

Government of India

Ministry of Health and Family Welfare  
( Department of Health )

New Delhi, 18th/19th April, 79.

To,

The President,  
Medical Council of India,  
Temple Lane, Kotla Road,  
NEW DELHI.

*Sub :* Inclusion of a regular detailed chapter on Malaria in  
Medical Undergraduate Courses.

Sir,

In the meeting of co-ordination Committee on Bio-medical Research held on the 17th November, 1978, under the Chairmanship of Shri Rajeshwar Prasad, Secretary to the Government of India, Ministry of Health and Family Welfare, the following recommendation has *interalia* been made.

“More emphasis should be given for malaria training at the medical undergraduate level by devoting more time on the subject.”

Keeping in view the present deteriorating malaria situation in the country, it has become necessary that a regular detailed chapter on Malaria is included in the curriculum of Medical Undergraduate courses. This will ensure that a basic doctor has adequate knowledge of Malaria for effective tackling of the problem all over the country. It is, therefore, requested that the Medical Council of India may consider the implementation of the above recommendation and intimate to this Ministry the action taken in due course.

Yours faithfully,

Sd/-  
(Anand Prakash Arti)  
Director.

MINUTES OF THE MEETING OF THE MEDICAL  
EDUCATION AND RESEARCH COMMITTEE IN  
SURGERY AND ALLIED SPECIALITIES HELD  
ON THE 20TH SEPTEMBER, 1979 IN  
THE UNIVERSITY (VICE-  
CHANCELLOR SECRE-  
TARIATE) JAIPUR.

Present :

1. Dr. S.K. Pande *Chairman*
2. Dr. (Mrs.) S. Chatterjee,
3. Dr. G.S. Jhalla,
4. Dr. M.P. Singh,
5. Dr. K.C. Sogani.

1. Under Statute 42-E (4) of the University Hand Book Part II, Dr. G.C. Sharma, Principal, S.M.S. Medical College, Jaipur, *appointed* as convener of the Medical Education and Research Committee for the fresh term of three years ending on the 16th August, 1982.

Since Dr. G.C. Sharma, Jaipur, who was appointed as Convener of this Committee did not attend the meeting, Dr S.K.Pande, Prof. and Head of the Department of Surgery, S.N. Medical College, Jodhpur *was elected* as Chairman for this meeting.

2. The Committee noted that there is no statement of qualifications and teaching experience etc. of teachers in the affiliated Medical Colleges and other Universities were supplied by the office even in the meeting itself. However the Committee taking into consideration the (i) revised qualifications for the appointment of examiners at the Post-graduate degree as contained in Ordinance 278-C of the University Hand Book Part II

(amended to date) and (ii) revised qualifications for the appointment of examiners at the undergraduate examination as contained in Ordinance 272 (x) of the University Hand Book Part II (amended to date) revised the existing panel of examiners.

In this connection, the Committee also considered letter dated the 20th September, 1979 received from Dr. K.C. Sogani, Professor and Head of the Department of Paediatric Surgery, S.M.S. Medical College, Jaipur requesting for inclusion his name in the panel of Examiners. (*Vide Appendix-I*).

*Resolved that* his request be accepted and the Committee included his name in the aforesaid Panel of Examiners..

3. The Committee recommended *no change* in the courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and statutes :—

1. Final M.B.B.S. Examination, December, 1984.
2. M. Ch. Examination, December, 1982.
3. M.S. Examination, December, 1982.
4. P.G. Diploma in orthopaedics Examination December, 1982.

4. The Committee considered the plan of thesis of the following candidates who have applied for registration of the subject of their thesis for the examination mentioned against each :—

- |                             |                     |
|-----------------------------|---------------------|
| 1. Dr. Y.D. Sharma          | (M.S. Gen. Surgery) |
| 2. Dr. Vijai Krishna Dixit  | (—do—)              |
| 3. Dr. Ramesh Chandra Bohra | (—do—)              |
| 4. Dr. Prakash Narain Gupta | (—do—)              |
| 5. Dr. Om Prakash Jain      | (—do—)              |
| 6. Dr. Jitendra Sharma      | (—do—)              |
| 7. Dr. Arvinder Singh       | (—do—)              |
| 8. Dr. Mahavir Prasad Jain  | (—do—)              |

- |                                |                        |
|--------------------------------|------------------------|
| 9. Dr. Nand Lal Jhamaria       | (M.S. Orthopaedics)    |
| 10. Dr. Laljee Singh Kent      | (—do—)                 |
| 11. Dr. Anand Prakash Arya     | (—do—)                 |
| 12. Dr. Vinod Kumar Sharma     | (—do—)                 |
| 13. Dr. Chandra Kanta Sachdeva | (M.D. Anaesthesiology) |
| 14. Dr. Vinod Kumar Sharma     | (—do—)                 |
| 15. Dr. Ganga Shanker Garg     | (—do—)                 |

*Resolved that* the proposed Plans of the aforesaid candidates be accepted.

The meeting ended with a vote of thanks to the Chair.

Sd/-  
Convener.



## APPENDIX I

To :

The Chairman,  
Board of Medical Education Research  
Committee for Surgery and allied subjects,  
University of Rajasthan,  
Jaipur.

Dear Sir,

As per ammendments to appointment of Examiners-  
vide University minutes of the meeting of Faculty of Medicine  
held on August, 3, 1978 I submit my name for the examinership  
in Surgery. My Biodata is as follows :—

Dr. K.C. Sogani  
Reader in Surgery  
1965-1970.

Qualification.  
(M.S. (Gen. Surg.) 1957).

Professor of Pediatric Surgery since 1970.

Teaching M.S. Gen. Surg. Students since 1965.

Teaching M. Ch. (Paed. Surg. ) since 1977.

Paediatric Surgery is an allied subject of General  
Surgery.

Thanking you,

Yours faithfully,

Sd/-  
K.C. Sogani

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN PHYSIOLOGY  
HELD ON THE 20TH/21ST SEPTEMBER, 1979  
IN THE UNIVERSITY OFFICE, JAIPUR

Present :

1. Dr. M.L. Gupta
2. Dr. S.P. Mongia
3. Dr. C.L. Pathak
4. Dr. B.B. Maitrya.

(Dr. C.L. Pathak was present only on 20.9.1979).

1. Under Statute 42-E (4) of the University Hand Book Part II, the Committee *elected* Dr. S.P. Mongia, Professor and Head of the Department of Physiology, Jawahar Lal Nehru Medical College, Ajmer, as Convener of the Committee for the fresh time of three years ending on the 16th August, 1982.

2. The Committee revised the existing panel of examiners in the light of the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners as per the revised Ordinance 278-C and 272-X.

3. The committee considered the courses of study and text-books in the subject for the under-graduate and post-graduate degrees and diploma examinations and resolved to recommend that they may be continued with the following additions/alterations :—

I. First M.B.B.S. Examination, December, 1981 :

The addition and alteration in the courses of study in Physiology for I M.B., B.S. Examination 1981 be modified as per Annexure A.

**II. M.D. Examination, December, 1982 :**

Under O.278 III, it may be made obligatory that for appearing for M.D. Physiology examination the candidate should produce a certificate from Head of the Department that he has performed the experiments as enumerated in annexure 'B' during his two year training after registration.

**III. The courses of study and the scheme of examination for M.Sc. (Med.) examination be modified as per the recommendation made under para 4.****IV. The selection for various diploma courses and M.Sc. (Med.) be made as per the recommendation made under para 5.**

4. The committee considered the draft of common scheme of examination and detailed syllabi for the M.Sc. (Med.) Part I examination received from Dr. F.S.K. Barar, Professor and Head of the department of Pharmacology, Sawai Man Singh Medical College, Jaipur, and resolved to recommend that this be accepted with the following additions/atlerations :—

- (i) The syllabus suggested for Anatomy, Physiology, Biochemistry, Pharmacology, Pathology and Microbiology be accepted.
- (ii) The period of training should be 1½ year irrespective whether candidate is B.Sc. B.Sc. (Med.), B. Pharm., B.V. Sc. and A.H. or B.D.S. or M.Sc. or M. Pharm.
  - (a) The examination for part I will consist of two papers. Paper I should consist of three sections A, B and C for Anatomy, Physiology and Biochemistry respectively. Each section will consist of three questions out of which the candidate will have to attempt two questions. Each question will be of 25 marks. Similarly,

paper II will also consist of three sections. A, B and C for Pharmacology, pathology and Microbiology respectively. Each section will contain three questions out of which two will have to be attempted. Each question will be of 25 marks.

- (b) Each section will be answered in separate answer-book.
- (c) Each section will be set by the external examiner of the subject concerned and will be assessed by the internal examiner of the subject concerned of the same institution.
- (d) In order to pass the examination the candidate must secure a minimum of 50% marks in both the papers taken together.
- (e) After passing M.Sc. (Med.) Part I the candidate will have to undergo training of two years in the subject of his registration. The courses of study and the system of assessment for M.Sc. Part II will be the same as has already been provided under O.278 F (iv).

5. The committee resolved to reiterate that the selection for M.Sc. (Med.) and the various Diploma courses be done when the regular batch completes house job as in case of M.D. and M.S. examinations and necessary changes be made in O.278 F (ii) and O.278 G-3 of the University Hand Book Part II.

The meeting ended with a vote of thanks to the chair.

Sd/-

(S.P. Mongia)

*Convener*

Medical Education and Research  
Committee in Physiology.

## ANNEXURE A.

## Physiology.

## II--Human Physiology ( Including Bio-Physics ).

## 1. General Physiology :

- (i) Signs of life.
- (ii) General principles in the study of physiology : functional organisation of human body; cell as a living unit.
- (iii) Structure, components, subcellular units, cell membrane.
- (iv) Properties of cell membrane—permeability and transport—active and passive; carrier system; receptor properties.
- (v) Bio-electric Potentials : Dissociation, Cation, anion, dissociation of different electrolytes, strong and weak electrolytes, dissociation of weak acids and bases and of amino acids and of protein, isoelectric point, H-ion-concentration, reaction of biological fluids, PH-notation, Methods of determination of H-ion-concentration, Buffer. Solution :  
 Gram molecular solutions, equivalent solution, diffusion, osmosis, dialysis, crystalloids and colloids, properties of colloids and their solution (in outline) sol and gel, Tyndall phenomenon. Emulsions and suspensions. Kataphoresis, absorption, osmotic pressure and its determination, isotonic, hypertonic, Iso-osmotic solutions, semipermeable membranes. Filtration—physiological application of Vital action. Surface tension, plasma membrane, imbibition, hydro-tropy. Donnan's membrane equilibrium.
- (vi) Radio Activity—Isotopes and their use in Physiology.

## 2. Muscle and Nerve :

Muscle—types, structure, excitation of muscle and other tissues, Excitation-contraction coupling and molecular

basis of muscular contraction, time factor in excitability, mechanical changes in a muscle during contraction. Effect of initial length temperature, load and multiple stimuli, tetanus, work, voluntary contraction, fatigue, chemical composition of muscle. Chemical changes accompanying contraction, heat production in muscular contraction, electrical changes during contraction, Rigor mortis. Electromyography, pathophysiology of common myopathies. Involuntary Muscle : Physiological properties. Nerve : Neuron : Structure and Function, degeneration and regeneration, excitation of nerve fibres. electrical, chemical and thermal changes in nerve during conduction. Nature of transmission, Humoral agents—conditions affecting the passage of nerve impulse, Electrotonus. Effect of electrical stimuli applied to human nerves through skin. Reaction of degeneration. Neuromuscular fatigue :

Nerve-supply of muscle : Neuromuscular junction and transmission of nerve impulses across it.

### 3. Autonomic Nervous System :

Vegetative organs, general anatomy of their nerve supply. Craniosacral and dorsolumbar outflows. Spinal para-Sympathetic. Humoral transmission of nerve impulse, cholinergic and adrenergic nerves. Different nerve supply of to vegetative organs. Higher central control of the autonomic nervous system. Main functions, Endocrines and autonomic nervous system. action of Drugs.

### 4. The Circulation :

Historical Review, structure and properties of cardiac muscle, special junctional tissues, innervation of the heart, nutrition of the heart, cardiac metabolism. Events in the cardiac cycle. Intracardiac pressure changes, action of valves, Cardiac sounds. Electrical potential changes; electro-cardiogram, origin and propagation of heart beat, Extra systole, auricular flutter, fibrillation, heart block. Cardiac output. Pericardium : function Control of the heart.

Blood flow in vessels. Haemodynamics, pressure, velocity of flow. Circulation time. Arterial pulse, Capillary circulation. Venous flow, Venous return, action of the valves, Venous pressure, venous pulse. Polygraphy,

Control of blood vessels : nervous, chemical and physical. Blood-pressure : diastolic, systolic, mean and pulse-pressure, measurement, regulation. Special circulation, coronary, pulmonary, brain, hepatic, renal and cutaneous. Foetal circulation. Effect of exercise on circulation. Effect of gravity and haemorrhage on circulation, shock. Cardiac reserve, cardiac and circulatory efficiency tests.

Tissue-fluid and lymph—Formation, drainage and function. Lymphoid tissues—structures and functions. Spleen—structure and functions. Blood depots.

## 5. The Blood :

Physical properties of Blood, composition and its functions, coagulation of Blood, Plasma Proteins, Corpuscles—morphology functions, fate, development. anaemias, Blood groups, transfusion. Haemolysis. Haemoglobin and its derivatives. Blood Substitutes, Blood bank. Reticulo-endothelial system, structure, and function. Leucocytes, Platelets, Blood-volume-regulation and measurement.

Respiratory Organs—functional anatomy. Mechanics of respiration graphic record. Quantities of air breathed, Vital capacity. Composition of respiratory gases, gas analysis, blood gases tension. Solubility of gases in fluids. Carriage of oxygen and carbon di-oxide by blood to and from tissues. Alkali reserve.

## 6. Control of Respirations :

Regulation, exercise and Anoxia. Co-poisoning. Effect of changes of barometric Pressure on respiration, mountain sickness and oxygenation diseases.

Cyanosis, Dyspnea, periodic breathing, a sphyxia, artificial respiration and ventilation. Air and shelter. Physiology of a viation and Space Physiology. Oxygen therapy, Hyperbaric oxygenation.

## 7. Alimentary System :

Structure in relation to functions, associated glands : their nerve supply and functions, secretion—nature and process of :

Mouth and Saliva : Secretion, mechanism of secretion and action of drugs.

**Stomach :**

Composition of gastric juice, action of juice, limitation of gastric acidity, methods of investigations of gastric secretion. Mechanism and regulation of secretion, peptic ulcer.

Pancreatic Juice-composition and action, mechanism of its secretion. Succus Entericus-composition and action, mechanism of its secretion. Absorption of water, minerals and electrolytes.

**8. Absorption of food stuffs :**

Carbohydrates, fats and proteins, Nature of absorption pumping action of villi, hydrotrophy. Functions of the large intestine, chemistry of bacterial action forces.

Mechanical processes of digestion-mastication, deglutition, peristaltic movements of the stomach, vomiting, nervous control of the alimentary canal, movements of the small and large intestines, Defecation, Constipation, Vomiting assessment of functions—gastric, pancreatic and intestinal.

**Liver :**

Its functions. Bile-composition, actions, mode of secretion, storage and expulsion of Gall bladder—function, emptying of the bladder mechanism. Circulation of the salts and pigments. Jaundice, Van den bergh's test, Storage and detoxicating functions of the liver. Liver function tests.

**9. Excretory System :**

Evolution of excretory mechanism and comparative physiology of kidney. Kidney-Structure and function, control of renal secretion. Effects of diet on Kidney. Extirpation of Kidneys. Artificial Kidney.

Renal efficiency tests, Micturition. Urine : Reaction, Physical characteristics and composition. Origin and significance of urea, ammonia, creatinine, creatine, uric acid, hippuric acid, chlorides, sulphates and phosphates. Urinary deposits and pathological urine.



## 10. Constancy of internal environment :

Blood contents : Water balance. Role of Na, Ca, KCl, Ca salts, Magnesium, Iron, Manganese, Cobalt, Copper, Zinc, phosphorus, Iodine, Fluorine, Glucose, fat and amino acid, H-ion concentration (Acidosis and alkalosis)  
 Blood gases : Hormones.

Constancy of body temperature : Heat production, Heat loss, heat regulating centre, failure of regulation, refrigeration heat stroke etc. fever, Hypothermia, Hyperthermia.

## 11. Skin :

Structure and functions. Functions of sweat, Composition, secretion, types and control of pigments of the skin, Sebum.

## 12. Reaction of Trauma :

Inflammation, defence reaction. Immunity—Chemical and cellular.

## 13. Central Nervous System :

Structural and functional organisation. Motor and sensory part and structure of the spinal cord, Medulla, pons and Midbrain. Methods of investigation of the tracts of the central nervous system and the spinal roots. Reflex activity of animals.

Function of the spinal cord. Functions of the root of the spinal nervous reflex, their classifications and their significance. Properties and characteristics of reflex action. Action of drugs on reflexes, synapse. Motor units and motor neurone pools, study of reflexes in man—deep, superficial and visceral, ankle clonus and Babinski's sign. absence reflexes, alteration of the character of reflex as influence of higher centres on reflexes. Relation between reflex and muscle tone. Postural reflexes, Spinal. Midbrain and thalamic animal, cortical flexion, Hemisection and complete transection of the spinal cord; Brown Sequard Syndrome and other lesions.

## 14. Maintenance of posture and equilibrium :

Muscle co-ordination and maintenance of equilibrium. Receptors and reflexes concerned in posture and equilibrium. Function of the Otolith organs. Semi-circular

canals. Upper and lower motor neurone, mechanism involved in coordinated movements, reciprocal innervation of antagonistic muscles. Excitation and inhibition. Rhythmical activity. Cerebrum : white and grey matter, types of fibres (association, commissural and projection) structure of the layers of the grey matter of the cortex.

Function of the cerebrum, methods of study, Effect of removal of the cerebral cortex, localization of cerebral areas, functions of the layers of the grey matter of the cortex.

Basal ganglia Thalamus, Hypothalamus, Red nucleus. Diter's nuclei, Cerebellum : Structure, connections and functions.

Physiological basis of Tabes, Syringomyelia, parkinsonism Polyneuritis, cerebral tremors.

Nutrition of the central nervous system—cerebrospinal fluid. Sensation—General (superficial and deep) and special.

#### Receptors :—

General (in muscle, skin and other tissues) and special, cutaneous sensations, characteristics and properties of receptors. Webers and Mullers Laws, Impulse, adaptation. General sensations, classification, significance. Pain and conditioned pain (cutaneous, muscular, visceral and referred pain), hyperalgesia and nociceptive system.

Conditioned reflexes and their biological significance. Hunger and thirst :

Elementary psychology--physiology of conscious state, consciousness, loss of consciousness-sleep, relation of narcotics and anaesthesia to sleep, effects of loss of sleep. Electrical reaction of the cortex. The subconscious and superconscious states Cognition, affection and conation, Perception, attention memory, instincts and habits, emotion, Physiology of speech-Larynx-structure and functions, voice, vocal speech.

Electro-Encephalogram.

#### Special Senses :—

Taste, Nervous pathway and central connections of the tongue receptors, Types of taste, Significance.

**Smell :**

Connection of the nasal receptors, nervous pathway, types of smell, significance.

**Ear :—**

Functional anatomy, mechanical processes in hearing, Cochlea, central connections, nervous pathways and function. Physiology of hearing, Range of hearing, Auditory efficiency, Weber's and Rinne's tests.

**Eye :—**

Functional anatomy of the eye. Fluids of the eye and intraocular pressure. Eye as an optical instrument. Size of the retinal image. Accommodation. Range of distant vision. Visual acuity, Defects of the optical apparatus. Retinoscopy, Functions of the Iris, Functions of Retina. Changes in the Retina during activity. Night vision. Duration of visual sensation, ophthalmoscopy. Perimetry, visual sensation, colour vision. After image, simultaneous and successive contrast, Binocular colour mixture, Nervous path connected with vision. Reflexes of the eye. Visual judgements, Binocular vision. Movements of eye-ball.

**15. Ductless glands :**

Neural-endocrinal axis, feed-back control system. Functions and interrelation (together with associated clinical syndromes) of :

Pituitary, Thyroid, Parathyroid, Thymus, Suprarenal cortex and Medulla, Islet tissue of Langerhans, Gonads, Pineal. Hormones connected with the alimentary canal.

**16. Reproductive System :**

Functions of the genital organs in both sexes, ovarian cycle and ovulation, menstrual cycle, Physiological basis of fertilisation Implantation and functions of placenta, pregnancy and parturition. Nutrition of Embryo, Foetal Physiology, Mammary glands and secretion, Fertility control, Physiological basis.

## Practicals

### Experimental and Human Physiology :—

#### 1. Frog Experiments :

- (a) Stimuli, electrical instruments used.
- (b) Striated Muscle-nerve preparation. Sample Muscle curve, effect of temperature, load (work), multiple stimuli, clonus, tetanus, fatigue.
- (c) Nerve-rate of conduction.
- (d) Frog's heart and blood vessel, observations on heart *in situ*, Recording movements of heart. Effect of warming and cooling the sinus, heart block. Stannius ligature-1st and 2nd, All or none law; effect of stimulating the normally floating heart, extrasystole, compensatory pause, refractory period, baguseffect of stimulation, effect of drugs.
- (e) Perfusion of heart : effect of electrolytes.

#### 2. Central Nervous System :

Reflexes in man, general sensation, (cutaneous and proprioceptive) motor function. Cranial Nerves, Special senses :

- (a) Examination of the ear, nose and throat.
- (b) Section of the eye, formation of the image on the retina, visual acuity-distant and near vision, perimetry, blind spot, ophthalmoscope, phakoscope, dioptrics, lenses.

#### 3. Haemopoietic System :

- (a) Wet preparation, Action of reagents, Blood film differential count. Haemocytometry-Haemoglobin estimation, Haemin-crystal, Blood group, Bone marrow. Platelet count, Reticulocyte count.
- (b) Physical properties of blood, hematocrit, fragility of red cells, sedimentation rate, specific gravity, coagulation time, bleeding time.

#### 4. Circulatory System :

- (a) Examination of the heart and blood-vessels, inspection, palpation, percussion, auscultation. Sphygmography, Sphygmomanometry.

- (b) Cardiac efficiency tests.
- (c) Capillary and cutaneous circulations : Capillary pulsation. Reactive hyperaemia, triple response.

## 5. Respiratory System :

Examination of the respiratory organs, nose, chest : inspection, palpation, percussion, auscultation. Pulmonary ventilation, tidal air, spirometer, Vital capacity, stethograph, Artificial respiration.

### Demonstrations

1. Electrocardiograph.
2. Screening of the bowel after bismuth meal under X-Ray.
3. Kymographic demonstration of blood pressure, Vagus and some drug, effects on heart and blood vessels in mammals. Heart perfusion (mammal).
4. Intestinal movements.
5. Respiration : Control of respiration.
6. Methods of clinical examination : General and digestive system.
7. Gas Analysis and B.M.R.

### *Books Recommended :*

#### **Text Books :**

#### *Theory :*

1. Bell, Davidson, Scorbrough---Text Book of Physiology and Biochemistry.
2. Keele and Neil : samson Wright's Applied Physiology.
3. William F. Ganong : Review of Medical Physiology.

#### *Practical :*

1. V.G. Ranade--A text book of Practical Physiology.

#### *Reference Books :*

1. Best and Taylor : Physiological Basis of Medical Practice.
2. Evans : Principles of Human Physiology.

3. Patton and Ruch : Medical Physiology and Bio-Physics.
4. Bard : Medical Physiology.
5. Houssary : Human Physiology.
6. Liddell and Sherrington : Mammalian Physiology.

## ANNEXURE-B.

List of experiments to be performed by the candidates appearing for M.D. Physiology examination :

**I. Experimental Physiology.****A. Amphibian Experiments :**

1. Perfusion of blood vessels to demonstrate the effect of various drugs and ions.
2. Perfusion of isolated frog's heart and effect of various drugs and ions.

**B. Mammalian Experiments :***Experiments on rabbits :*

1. Study of Physiology of smooth muscle—motility of isolated segment of small intestine and effect of drugs on it; Recording of pressure change in the hollow visera.
2. Perfusion of coronary vessels in isolated heart and effect of drugs and ions.

*Experiments on dogs :*

1. Recording of normal blood pressure and respiration in anaesthetized dogs and to study the effect of following experimental states on blood pressure and respiration.
  - (a) Hyperventilation and Asphyxia.
  - (b) Adrenaline and acetyl choline.
  - (c) Stimulation of intact and cut vagus.
  - (d) Activation and inhibition of sino-aortic mechanism.
  - (e) Haemorrhage and transfusion.
  - (f) stimulation of sciatic nerve.
2. Cardiac output by various techniques.
3. Plethysmography and oncometric study during various physiological experimental states.
4. Demonstration of compound action potential.

6. Estimation of serum alkaline and acid phosphatase.
7. Determination of serum proteins and protein fractions by electrophoresis.
8. Estimation of various amino acids by Chromatography.



MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN OBSTETRICS AND GYNAECOLOGY HELD ON THE 20th SEPTEMBER, 1979 IN THE UNIVERSITY OFFICE (VICE-CHANCELLOR'S SECTT.), JAIPUR.

Present :

- |                               |                  |
|-------------------------------|------------------|
| 1. Dr. (Mrs.) Sheela Sharma,  | <i>Convener.</i> |
| 2. Dr. (Mrs.) Pushpa Gupta    |                  |
| 3. Dr. (Miss) Gyatri Vijay    |                  |
| 4. Dr. (Miss) Hitesh Bhargava |                  |
| 5. Dr. (Miss) Chand Kiran     |                  |

1. Under statute 42-E (4) of the University Hand Book. Part II, Dr. (Mrs.) Sheela Sharma, Prof. and Head of the Department of Gynaecology and Obstetrics, S.N. Medical College, Jodhpur, *appointed* as Convener of the Medical Education and Research Committee in Obst and Gynae. for a fresh term of three years ending on the 16th August, 1982.

2. The Committee noted that there is no statement of qualifications and teaching experience etc. of teachers in the affiliated Medical Colleges and other Universities were supplied by the office even in the meeting itself. However the committee taking into consideration the (i) revised qualifications for the appointment of examiners at the Post-Graduate Degree as contained in ordinance 278-C of the University Hand Book-Part II (amended to date) and (ii) revised qualifications for the appointment of examiners at the undergraduate examination as contained in Ord. 272 (x) of the University Hand Book Part II (amended to date) revised the existing panel of examiners (*Vide Appendix-A*)

3. The committee *recommended* courses of study and text books in the subject for the following examinations together with

the relevant additions and/or alterations to the Regulations and Ordinances and Statutes as under :—

(i) *Final M.B.B.S. Examination, December, 1984 :—*

(a) Under the recommended books the following books *be added* :—

“Alam Brews :—Obstetrics”

(b) The existing five months period of clinical posting and practical training at the II M.B.B.S. and III M.B.B.S. (i.e. I-II terms and V semester and VIII and IX Semester) taken together be redistributed as 1 month at the II M.B.B.S. level and 4 months at the III M.B.B.S. level instead of 2 months in each.

(ii) *M.S. Examination, December, 1982—No change.*

(iii) *P.G. Diploma in Obst. and Gyna. Examination, May, 1982—No change.*

4. The Committee considered and approved the plan of thesis of the following candidates who have applied for registration of the subject of their thesis for the examination mentioned against each :—

1. Dr. Prem Kanwar Rathore	M.S. Obst. & Gyn.
2. Dr. Vijai Laxmi Saini	—do—
3. Dr. Santosh Pareek	—do—
4. Dr. (Miss) Saroj Karnawat	—do—
5. Dr. (Miss) Sadhna Kaul	—do—
6. Dr. (Miss) Shashi Luthra	—do—
7. Dr. (Mrs.) Sushma Sharma	—do—
8. Dr. (Mrs.) Raj Rani Handa nee Gupta	—do—
9. Dr. (Miss) Renuka Lal	—do—
10. Dr. (Mrs.) Manju Narang	—do—

- |                              |                   |
|------------------------------|-------------------|
| 11. Dr. Manohar Kapoor       | M.S. Obst. & Gyn. |
| 12. Dr. (Mrs.) Sunanda Gupta | —do—              |
| 13. Dr. (Miss) Asha Jain     | —do—              |

The meeting ended with a vote of thanks to the Chair.

*Sd/-*  
(Dr. (Mrs.) S. Sharma)  
*Convener.*

## APPENDIX A

## PANEL OF EXAMINERS OF OBSTETRICS AND GYNAECOLOGY.

S.No.	Name (Surname first) with Designation.	Name of the College.
<b>Internal :</b>		
1.	Mathur, Dr. Tara Reader	R.N.T. Medical College, Udaipur
2.	Bhatia (Miss) Dr. S., D.G.O. M.S., Professor	S.P. Medical College, Bikaner.
3.	Gupta, Dr. (Mrs.) Pushpa, D.G.O., M.S., Prof. & Head.	S.M.S. Medical College, Supdt. Zanana Hospital, Jaipur.
4.	Ramesh, Dr. Shashi, Prof.	R.N.T. Medical College, Udaipur
5.	Sharma, Dr. (Mrs.) S., Prof.	S.N. Medical College and Umaid Hospital, Jodhpur.
6.	Chand Kiran, Reader	S.N. Medical College, Umaid Hospital, Jodhpur.
7.	Dr. Hitesh Bhargava	J.L.N. Medical College, Ajmer.
8.	Dr. Gayatri Vijay	S.P. Medical College, Bikaner.
9.	Dr. Priti Mishra,	S.P. Medical College, Bikaner
<b>External :</b>		
10.	Agarwal, Dr. (Mrs.) S., M.S. Professor.	Medical College, Raipur (M.P.)
11.	Anjanoyulu, Dr. R., M.D., D.G., Professor.	B.J. Medical College, Poona.
12.	Banker, Dr. R.N., M.D., Hony. Addl. Professor.	N.H.L. Medical College, Ahmedabad.
13.	Banwari, Dr. (Mrs.) S., M.S. Professor.	Gandhi Medical College, Bhopal.
14.	Bhatt. Dr. Rohit V., M.D., D.C.H., Professor.	Medical College, Baroda.
15.	Bhateja, Professor	Medical College, Allahabad.
15a.	Dr. D.P. Hora	Medical College, Jamshedpur.
16.	Ganda, Singh, Dr. (Mrs.) S., F.R.C.C.G., Professor.	Govt. Medical College, Patiala.
17.	Gupta, Dr. (Miss) K., M.S., Professor.	Medical College, Jabalpur.
18.	Gupta, Dr. (Miss) Prof. & Head of the Department.	Institute of Medical Sciences, B.H.U., Varanasi.

19. Gulati, Dr. (Mrs) B., Prof. Gandhi Medical College, Sultana  
Zanana Hospital, Bhopal.
20. Hingorani, Dr. (Mrs)., A.P.I. Medical Sciences, New  
V. Prof. Delhi.
21. Howie, Dr. Beryl Overton, Cristian Medical College,  
M.R. C.O.G., Prof. & Head. Ludhiana.
22. Kotwani, Dr. (Miss) E.G., M.A. Medical College, New Delhi  
M.D., D.G.O., Professor.
23. Dr. Kripal Kaur, M.D., C.H. Hospital for Women,  
Professor. Amritsar
24. Kuti, Dr. Devki, Professor. K.G. Medical College, Lucknow.
25. Mohlman, Dr. (Mrs.) M.M. L.L.R.M. Medical College, Meerut  
M.R.C.O.G., Professor and Head.
26. Mukherjee, Dr. (Miss) Medical College, Kanpur.  
M.M., R.R.C.S., Professor.
27. Murrall, Dr. C. Hallor, Cristian Medical College, Ludhiana  
Professor.
- 27a. Dr. (Miss) Maya Hazra Medical College, Baroda.
28. Nadkarni, Dr. R.M., N.H.L.M. Medical College,  
D.G.O., F.R.C.S., Hony., Ahmedabad.  
Addl., Professor.
29. Nandakar, Dr. (Mrs.) V., M.G.M. Hospital, Indore.  
D.G.O.M., Professor.
30. Dr. Nawal Kishore, Prof. S.N. Medical College, Agra.
31. Dr. (Mrs.) H.N. Shah M.P. Shah Medical College,  
Jamnagar.
32. Philip, Dr. (Miss) Clara, Medical College, Amritsar.  
Professor.
33. Pinto Ressoris, Dr. Y., Lady Harding Medical College,  
M.D. Professor. New Delhi.
34. Dr. (Miss) Rajani, Asso. Lady Harading Medical College,  
Professor. New Delhi.
35. Dr. (Miss) Shastrakra, Prof. Medical College, Aurangabad.
- 35.a Dr. S. Vohra Lady Harding Medical College,  
New Delhi.
36. Sankhelkar, Dr. I.C. Prof. Grant Medical College, Bombay.
37. Saraiya, Dr. C.C., M.D., Grant Medical College, Bombay.  
F.R.C.S., Hony. Professor.
38. Saxena, Dr. Danesh, Prof. S.N. Medical College, Agra.
39. Sinha, Dr. H.B., M.S., Prof. P.W. Medical College, Patna.
40. Shah, Dr. C.A., M.D., Grant Medical College, Bombay.  
F.R.C.S., Hony. Professor.

1	2	3
41.	Shaista, Dr. Mohsin, M.S., Reader and Head.	J.N. Medical College, Aligarh.
41a.	Dr. (Miss) Rathi	Addl. Prof. Medical College, Rohtak.
42.	Dr. (Mrs.) Vaidya, M.D., D.G.O. Hony. Professor.	C.A.M.A., & Albless Hospital, Bombay.
43.	Varma, Dr. Usha, Professor	Medical College, Rohtak.
44.	Wagh, Dr. K.V., Professor.	G.R. Medical College, Gwalior.
45.	Dr. Giraja Dhar, M.R.C.O.G., Professor.	Govt. Medical College Women's Hospital, Srinagar.
46.	Dr. (Mrs.) Mukerjee.	M.G.M. Hospital, Indore.
47.	Dr. (Mrs.) C. Saxena, Retired, Professor.	S.D.M. Hospital, Bapunagar, Jaipur.
48.	Dr. (Mrs.) K.S. Pareek, Professor.	B.J. Medical College, Ahmedabad
49.	Dr. Pareek, Professor.	B.J. Medical College, Ahmedabad
50.	Padubani, Professor.	Maulana Azad Medical College, Delhi.
51.	Dr. Otti Oyebia.	Medical College, Gawalior.
52.	Dr. Walkoo	Medical College, Jammu.
53.	Dr. H.N. Pareek	B.J. Medical College, Ahmedabad
54.	Dr. Nishaq Bandi	Medical College, Srinagar.
55.	Dr. Satya Khenajia	Assional Rewa Medical College,
56.	Dr. V. Apte.	Retired Professor, Udaipur.
57.	Dr. S. Bhatia	Retired, Professor, Jaipur.
58.	Dr. Jacob	Retired, Professor, Jaipur.
59.	Dr. N. Bhaddi	Addl. Prof. Medical College, Srinagar.

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN OPHTHALMOLOGY AND E.N.T. HELD ON THE 21st SEPTEMBER, 1979 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIATE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. M.R. Jain (Convener)
2. Dr. G.K. Sharma
3. Dr. U.K. Satsangi.
4. Dr. D.L. Changan.
5. Dr. K.C. Rai.

1. Under Statute 42-E (4) of the University Hand Book Pt. II, the Committee *appointed* Dr. M.R. Jain, Prof. and Head of the Deptt. of ophthalmology, R.N.T. Medical College, Udaipur as convener of the Medical Education and Research Committee for the fresh term of three years ending on the 16th August, 1982.

2. The Committee *noted* that there is no statement of qualifications and teaching experience etc. of teachers in the affiliated Medical colleges and other Universities were supplied by the office even in the meeting itself. However the Committee taking into consideration the (i) revised qualifications for the appointment of examiners at the Post-graduate degree as contained in Ordinance 278-C of the University Hand Book Pt. -II (amended to date) and (ii) revised qualifications for the appointment of examiners at the Undergraduate examination as contained in Ordinance 272(x) of the University Hand Book Pt. II (amended to date) revised the existing panel of examiners (vide Appendix-A). The Committee also prepared a fresh Panel for OTOLARYNGOLOGY (E.N.T.) *Vide Appendix-B.*

The Committee recommended that the list of these examiners be sent to *all* the members of the Medical Education and Research Committee.

3. The Committee recommended courses of study and text-books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes.

(i) *Final M.B., B.S. Examination, Dec., 1984 :*

(a) The following books be inserted under Section 'A'—  
Ophthalmology :—

1. Parson's—Diseases of eyes,
2. Diseases of eyes—by May and worth.

(b) The following books be inserted under section 'B'—  
E.N.T. :—

1. Fundamentals of Otolaryngology by Boies.
2. Synopsis of E.N.T.—By B.K. Roy Chaudhary.

(ii) *M.S. Ophthalmology and M.S. E.N.T. Examinations, Dec., 1982.*

No books can be specifically prescribed, All books pertaining to subject should be read.

(iii) *P.G. Diploma in Ophthalmology and E.N.T. Examination of May, 1982 :-No Change.*

4. The Committee considered and approved the plan of thesis of the following candidates who have applied for registration of the subject of their thesis for the examination mentioned against each :—

- |     |                            |                      |
|-----|----------------------------|----------------------|
| 1.  | Dr. Jai Krishan Malhotra—  | M.S. (E.N.T.)        |
| 2.  | Dr. Ashok Kumar Sood       | —do—                 |
| 3.  | Dr. Shambhu Prasad Sharma  | —do—                 |
| 4.  | Dr. Rajesh Kumar Sharma    | —do—                 |
| 5.  | Dr. A.K. Gupta             | —do—                 |
| 6.  | Dr. Satish Chadha          | M.S. (Ophthalmology) |
| 7.  | Dr. Madhu Mathur           | —do—                 |
| 8.  | Dr. Jagdish Prasad         | —do—                 |
| 9.  | Dr. Vishnu Swaroop Gupta   | —do—                 |
| 10. | Dr. Anjali Kataria         | —do—                 |
| 11. | Dr. Umesh Kumar Chittora   | —do—                 |
| 12. | Dr. Mahesh Chandra Agrawal | —do—                 |
| 13. | Dr. Ugam Raj Salecha       | —do—                 |



14. Dr. Om Prakash Suthar —do—
15. Dr. Arun Kumar Falor —do—

The meeting ended with a vote of thanks to the Chair.

*Sd/-*  
(Dr. M.R. Jain)  
*Convener.*

## APPENDIX-'A'

## PANEL OF EXAMINERS OF OPHTHALMOLOGY

## Internal Examiners :

- |   |  |
|---|--|
| 1. Desai, Dr. N.C., F.R.C.S.,<br>D.O. Professor & Head.           | S.N. Medical College, Jodhpur,<br>(both for M.B.B.S. and Post-graduate examination). |
| 2. Jain, Dr. Mohan Rai.<br>M.B.B.S., M.S., Professor<br>and Head. | R.N.T. Medical College, Udaipur<br>(both for M.B.B.S. and Post-graduate).            |
| 3. Kulshrestha, Dr. O.P., M.S.<br>R.A.C.S., Prof., & Head.        | S.M.S. Medical College, Jaipur,<br>(both for M.B.B.S. and Post-graduate).            |
| 4. Mathur, Dr. S.P., M.S.,<br>F.A.C.S., Prof., and Head.          | S.P. Medical College, Bikaner.<br>(both for M.B.B.S. & post-graduate)                |
| 5. Purohit, Dr. G.K., M.S.,<br>D.O.M.S., Reader.                  | S.M.S. Medical College, Jaipur.<br>(for M.B.B.S.)                                    |
| 6. Sharma, Dr. R.G., M.S.,<br>Professor.                          | S.M.S. Medical College, Jaipur.<br>(both for M.B.B.S. & Post-graduate)               |
| 7. Sharma, Dr. G.K., M.S.<br>Professor and Head.                  | J.L.N. Medical College, Ajmer.<br>(for M.B.B.S.)                                     |
| 8. Agarwal, Dr. R.L., M.S.,<br>Reader.                            | R.N.T. Medical College, Udaipur<br>(for M.B.B.S.)                                    |
| 9. Vyas, Dr. M.S., M.S.,<br>Reader.                               | S.P. Medical College, Bikaner.   |
| 10. Satsangi Dr. U.K., M.S.,<br>Professor and Head.               | S.P. Medical College, Bikaner.   |
| 11. Dr. Yogesh Mishra, M.S.,<br>Reader.                           | S.M.S. Medical College, Jaipur.  |

## External Examiners :

- |   |  |
|---|--|
| 12. Agarwal, Dr. D.P.,<br>Professor and Head. | M.A. Medical College, New Delhi                                  |
| 13. Chaddah, Dr. M.R.,<br>Professor and Head. | Govt. Medical College, Amritsar.                                 |
| 14. Dayal, Dr. Y., Asso.<br>Professor.        | All India Institute of Medical<br>Sciences, New Delhi.           |
| 15. Gupta, Dr. Subhas, Prof.                  | Govt. Medical College, Jammu.                                    |
| 16. Saiduzaffar, Dr. Hamida,<br>Professor.    | Medical College, Muslim Univer-<br>sity, Aligarh.                |
| 17. Mathur, Dr. R.N.,<br>Professor and Head.  | B.J. Medical College & Institute<br>of Ophthalmology, Ahmedabad. |

- |   |   |
|---|---|
| 18. Mehra, Dr. K.S.,<br>Professor and Head.     | College of Medical Science,<br>B.H.U. Varanasi.                   |
| 19. Mishra, Dr. R.N.,<br>Professor and Head.    | Govt. Medical College, Jabalpur.                                  |
| 20. Nahata, Dr. M.C.,<br>Professor and Head.    | M.G. Medical College, Indore.                                     |
| 21. Narang, Dr. S.K., Prof.                     | M.P. Shah Medical College,<br>Jamnagar.                           |
| 22. Patel, Dr. Bheku Bhai, Prof.                | B.J. Medical College, Ahmedabad                                   |
| 23. Reddy, Dr. Shiva, P., Prof.                 | Govt. Medical College & Institute<br>of Ophthalmology, Hyderabad. |
| 24. Raizada, Dr. I.N.,<br>Professor and Head.   | Govt. Medical College, Meerut.                                    |
| 25. Sharma, Dr. S.L., Prof.                     | Govt. Medical College, Patiala.                                   |
| 26. Singh, Dr. R.T.,<br>Professor and Head.     | G.S.V.M. Medical College,<br>Kanpur.                              |
| 27. Santok Singh, Dr.,<br>Professor and Head.   | Gandhi Medical College, Bhopal.                                   |
| 28. Singh, Dr. Yash Pal,<br>Professor and Head. | S.N. Medical College, Agra.                                       |
| 29. Dr. B.T. Maskati, Prof.                     | G.S. Medical College, Bombay.                                     |
| 30. Dr. Madan Mohan.                            | All India Institute of the Medical<br>Sciences, New Delhi.        |
| 31. Dr. B.M.D. Verma.                           | Medical College, Kanpur.  |
| 32. Dr. M.L. Agarwal                            | Medical College, Gwalior.   |
| 33. Dr. D.B. Chandra,<br>Director.              | Medical College, Allahabad.                                       |
| 34. Dr. Sudhakar, Professor.                    | Medical College, Baroda.  |
| 35. Dr. D.G. Modi, Hon., Prof.                  | Bombay.   |
| 36. Dr. Sudha Sutaria,<br>M.S. Professor.       | Medical College, Nagpur.  |
| 37. Dr. Manzul Ahmed, Prof.                     | Medical College, Srinagar.  |
| 38. Dr. N.N. Sood,<br>Ass. Professor.           | All India Institute of Medical<br>Sciences. Delhi.                |
| 39. Dr. A.N. Mehrotra,<br>M.S., Reader.         | Medical College, Jhansi.  |
| 40. Dr. Mrs. Saroj Shah,<br>M.S., Professor.    | Medical College, Ahmedabad.                                       |
| 41. Dr. L.C. Dutta,<br>Professor and Head.      | Medical College, Gauhati.   |

## APPENDIX-'B'

## PANEL OF EXAMINERS IN OF OTOLARYNGOLOGY (E.N.T.)

## Internal Examiners :

- |   |                                |
|---|--------------------------------|
| 1. Dr. P. Chatterjee,<br>Professor and Head,<br>Department of E.N.T.  | Medical College, Bikaner.      |
| 2. Dr. D.L. Chhangani,<br>Professor and Head,<br>Department of E.N.T. | Medical College, Jaipur.       |
| 3. Dr. K. Rai,  | Medical College, Udaipur.      |
| 4. Dr. K.K. Agarwal,<br>Reader and Head,<br>Department of E.N.T.      | Medical College, Jodhpur.      |
| 5. Dr. H.K. Kukreja, Reader   | S.M.S. Medical College, Jaipur |

## External Examiners (M.S.):

- |   |                                       |
|---|---------------------------------------|
| 1. Dr. O.P. Gupta, Prof. & Head<br>E.N.T. Department.                 | B.H.U. Medical College,<br>Varanasi.  |
| 2. Dr. D. Dayal, Prof. & Head,<br>E.N.T. Department.                  | K.G. Medical College, Lucknow         |
| 3. Dr. S.R. Singh, Prof. & Head,<br>E.N.T. Department.                | M.L.N. Medical College,<br>Allahabad. |
| 4. Dr. Raghu Sharma,<br>Professor and Head,<br>Department of E.N.T.   | Medical College, Ranchi.              |
| 5. Dr. C.S. Anand, Prof. & Head,<br>Department of E.N.T.              | Medical College, Indore.              |
| 6. Dr. P.P. Kaenik, Prof. & Head<br>Department of E.N.T.              | G.S. Medical College, Bombay.         |
| 7. Dr. N.K. Apte, Prof. & Head,                                       | Grant Medical College, Bombay         |
| 8. Dr. Majumdar, Prof. & Head   | Medical College, Jamnagar.            |
| 9. Dr. G.S. Kohil, Prof. & Head.                                      | Medical College, Rohtak.              |
| 10. Dr. S.P. Loombar,<br>Professor and Head,<br>Department of E.N.T.  | Medical College, Patiala.             |
| 11. Dr. A.R. Marawaha,<br>Professor and Head,<br>Department of E.N.T. | Medical College, Amritsar.            |
| 12. Dr. G. Narayanan.   | —                                     |
| 13. Dr. J. Gulati, Prof. & Head,<br>Department of E.N.T.              | Medical College, Bhopal.              |

- |   |  |
|---|--|
| 14. Dr. Ruay B. Udwardia,<br>Professor and Head.        | Medical College, Ahmedabad.  |
| 15. Dr. P.N. Ranade,<br>Professor and Head.             | Medical College, Ahmedabad.  |
| 16. Dr. G. Bahera, Prof. & Head.                        | Medical College, <i>Cuttack</i> .                                  |
| 17. Dr. C. Dass, Prof. & Head.                          | Medical College, <i>Silachar</i> .                                 |
| 18. Dr. S. Kameshwaran,<br>Professor and Head.          | Director, Institute of E.N.T.,<br>Medical College, <i>Madras</i> . |
| 19. Dr. L.H. Hinanandani,<br>Hony., Professor and Head. | T.N.M. Med. College, Bombay.                                       |
| 20. Dr. S.K. Kackar,<br>Professor and Head.             | A.I.I.M.S., <i>New Delhi</i> .                                     |
| 21. Dr. S. Chandra Shekhar,<br>Professor & Director.    | Institute of E.N.T. Medical<br>College, <i>Mysore</i> .            |
| 22. Dr. Mohd. Maqhool.,<br>Prof. & Head, E.N.T.         | Medical College, <i>Srinagar</i> .                                 |
| 23. Dr. A. Sinha, Prof. & Head,                         | Medical College, <i>Patna</i> .                                    |
| 24. Dr. P. Kacker, Prof. & Head,                        | Maulana Azad Medical College,<br><i>New Delhi</i> .                |
| 25. Dr. H.K. Jain, Prof. & Head.                        | Medical College, <i>Goya</i> .                                     |

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN COMMUNITY MEDICINE HELD ON THE 21ST SEPT., 1979 IN THE UNIVERSITY OFFICE (VICE-CHANCELLOR'S SECTT.)  
JAIPUR.

Present :

1. Dr. G.M. Mathur
2. Dr. P.N. Sharma
3. Dr. C.K. Joshi—Convener.

(1) Under statute 42-E (4) of the University Hand Book Pt.-II, Dr. C.K. Joshi, Prof. and Head of the Deptt. of Community Medicine, S.P. Medical College, Bikaner appointed as Convener of the Medical Education and Research Committee in community Medicine for the fresh term of three years ending on the 16th August, 1982.

(2) The Committee noted that there is no statement of qualifications and teaching experience etc., of teachers in the affiliated Medical Colleges and other Universities were supplied by the office even in the meeting itself. However, the committee taking into consideration the (i) revised qualifications for the appointment of examiners at Post Graduate degree as contained in Ord. 278-C of the Univ. Hand Book. Pt.-II (amended to date) and (ii) revised qualifications for the appointment of examiners at the Undergraduate examination as contained in Ord. 272 (x) of the Univ. Hand Book Pt.-II (amended to date) revised the existing panel of examiners (vide Appendix-A).

(3) *The Committee recommended* no change in the course of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes:

- (i) Second M.B.B.S. Examination, May, 1983.
- (ii) Final M.B.B.S. Examination, Dec., 1984.
- (iii) M.D. Examination, Dec., 1982.

(4) With Reference to the Resolution No. 7 (v) (B) of the Faculty of Medicine and Pharmaceutics, dated the 23rd/24th Nov., 1977, read with res. no. 2 (vi) (iv) of the Board of Studies in Medicine and Pharmaceutics, dated the 17/18th Oct., 1977, and resolution no. 5, of the Medical Education and Research Committee dated the 8/9th Sept., 1979, the committee *recommended* that Dr. T.P. Jain, Prof. and Head of the Deptt. of Community Medicine, S.M.S. Medical College, Jaipur be requested to review courses of study and scheme of examination for the said Diploma in accordance of the existing provisions.

(5) The Committee *considered and approved* the plan of thesis of the following candidates who have applied for registration of the subject of their thesis for the examination mentioned against each :—

1. Dr. Akhilesh Bhargava—M.D. Preventive and Social  
Medicine.
2. Dr. M.P. Pareek. —do—
3. Dr. Shahji Oomen —do—
4. Dr. Sudhir Kumar Puri —do—

The meeting ended with a vote of thanks to the Chair.

Sd/-  
(Dr. C.K. Joshi)  
Convener

## APPENDIX-'A'

## PANEL OF EXAMINERS FOR PREVENTIVE AND SOCIAL MEDICINE.

S.No.	Name (Surname first) with Designation.	Name of the College
<b>Internal :</b>		
1.	Dudani, Dr. I.U., Reader	S.M.S. Medical College, Jaipur.
2.	Jain, Dr. T.P., M.D., Prof.	S.M.S. Medical College, Jaipur
3.	Joshi, Dr. C.K., M.D., Professor and Head.	S.P. Medical College, Bikaner.
4.	Mathur, Dr. G.M., M.D., Professor and Head.	J.L.N. Medical College, Ajmer.
5.	Sharma, Dr. P.N., M.D., D.P.H., Prof. and Head.	R.N.T. Medical College,, Udaipur.
6.	Sharma, Dr. Rameshwar, M.D., M.S., Professor.	S.N. Medical College, Jodhpur.
7.	Tomar, Dr. V.N.S., M.D., Reader,	R.N.T. Medical College, Udaipur.
8.	Purohit, B.K., M.D., Reader.	S.M.S. Medical College, Jaipur.
<b>External :</b>		
9.	Bagehi, Dr. S.C., Professor and Head.	Magadh Medical College, Gaya (Bihar).
10.	Banerjee, Dr. S.C., Professor.	M.L.N. Medical College, Allahabad.
11.	Chugh, Dr. M.L., D.P.H., Professor.	Christian College, Ludhiana.
12.	Shah, Dr. Usha, Professor.	B.J. Medical College, Poona.
13.	Gupta, Dr. S.C., M.D., D.P.H., Professor and Head.	L.L.R. Medical College, Meerut.
14.	Gulati, Dr. P.V., Professor.	Lady Hording, Medical College New-Delhi.
15.	Basapa, Dr. D.G., Ph., Professor and Head.	Banglore Medical College, Bangalore.
16.	Ketkar, Dr. Y.A., M.D., D.P.H.	Government Medical College, Nagpur.
17.	Madhavan, Hutty, Dr. C.P., D.P.H. Professor.	Kottayam Medical College, Gandhi Nagar, Kottayam.
18.	Mathur, Dr. J.S., Professor.	G.S.V.M. Medical College, Kanpur.



- |   |  |
|---|--|
| 19. Malhotra, Dr. (Mrs.) Prabha, Professor.         | M.A. Medical Science, New-Delhi.             |
| 20. Marwaha, Dr. S.M., M.D., D.P.H., Professor.     | College of Medical Science, B.H.U. Varanasi. |
| 21. Bose, Dr. (Mrs.) D., Prof.                      | Gandhi Medical College, Bhopal               |
| 22. Dr. (Mrs.) Saroj Jha, Prof.                     | Topiwala National Medical College, Bombay.   |
| 23. Mittal, Dr. M.G., M.B.M.P.H.                    | Medical College, Indore.                     |
| 24. Pai, Dr. D.N., M.P.H., Professor.               | G.S. Medical College, Parel, Bombay-12.      |
| 25. Park, Dr. J.E., Professor.                      | Medical College, Jabalpur.                   |
| 26. Dr. N.R., Mehta, Professor.                     | Govt. Medical College, Surat.                |
| 27. Dr. H. Trivedi, Professor.                      | Medical College, Baroda.                     |
| 28. Dr. A.K. Govila, Professor.                     | G.R. Medical College, Gwalior                |
| 29. Dr. R.N. Srivastava, Professor                  | M.L.B. Medical College, Jhansi.              |
| 30. Dr. (Mrs.) Mayanathu, Prof.                     | B.J. Medical College, Poona.                 |
| 31. Siddhu., Dr. C.M.S., Prof.                      | Medical College, Faridkot.                   |
| 32. Singh, Dr. Harcharan, M.B., Professor and Head. | Govt. Medical College, Patiala.              |
| 33. Sinha, Dr. R.N., Professor.                     | Medical College, Darbhanga.                  |
| 34. Dr. S. Kar., Professor.                         | Medical College, Berhampur (Orissa)          |
| 35. Vasudeva, Dr. Y.L., Professor.                  | J.L.N. Medical College, Rohtak               |
| 36. Dr. S.P. Mehta, Professor.                      | Medical College, Goa.                        |
| 37. Dr. A.S. Sethi, Asso., Prof.                    | Government Medical College, Srinagar.        |
| 38. Dr. N. Nath, Professor.                         | Government Medical College, Burla (Orissa).  |
| 39. Dr. Sarswati Swain, Professor.                  | Medical College, Cuttack.                    |
| 40. Dr. R.D. Bansal, Professor.                     | Medical College, Jammu.                      |
| 41. Dr. B.D. Srivastava, Professor                  | K.G. Medical College, Lucknow                |
| 42. Dr. J.S. Bhatnagar, Professor.                  | —do—   |
| 43. Dr. S.K. Mehrotra, Professor.                   | S.N. Medical College, Agra.                  |
| 44. Dr. B.K. Mahanan, Professor.                    | Medical College, Sevagram.                   |
| 45. Dr. M.P. Dwivedi, Professor.                    | Medical College, Rewa (M.P.).                |
| 46. Dr. R.G. Pawar, Professor.                      | Medical College, Jamnagar.                   |
| 47. Dr. Bildaiya                                    | Municipal Medical College, Ahmedabad.        |
| 48. Dr. N.P. Vaidya, Professor.                     | Medical College, Simla.                      |
| 49. Dr. V.S. Saxena.                                | Medical College, Raipur.                     |

1	2	3
50.	Dr. C.S. Chuttani	Univ., College of Medical Sc., New Delhi.
51.	Dr. Urmila Lakhanpal, Prof.	Medical College, Amritsar.
52.	Dr. T.C. Tiwari, Professor.	Medical College, Varanasi.
53.	Dr. Bhat., Professor.	B.J. Medical College, Ahmedabad
54.	Dr. Baldev Raj.	Medical College, Gorakhpur.
55.	Dr. S.N. Sinha.	Nalanda Medical College, Patna.

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN PATHOLOGY AND MICROBIOLOGY HELD ON THE 22ND SEPTEMBER, 1979 AT 12.00 NOON IN THE VICE-CHANCELLOR'S SECRETARIATE, UNIVERSITY OFFICE, JAIPUR.

Present :

1. Dr. M.L. Sharma —Convener.
2. Dr. O.P. Gupta.
3. Dr. D.P. Gupta.
4. Dr. H.L. Arora.

(1) Under statute 42E (4) of the University Hand Book Part-II, the Committee appointed Dr. M.L. Sharma, Professor and Head of the Department of Pathology, S.M.S. Medical College, Jaipur, as convener of the Medical Education and Research Committee for the fresh term of three years ending on the 16th August, 1982.

(2) The Committee noted that there is no statement of qualifications and teaching experience etc. of teachers in the affiliated Medical College and other Universities were supplied by the office even in the meeting itself. However, the Committee taking into consideration the (i) revised qualifications for the appointment of examiners at the Post-graduate degree as contained in Ordinance 278-C of the University Hand Book Pt.-II (amended to date) and (ii) revised qualifications for the appointment of examiners at the Undergraduate, examination as contained in Ordinance 272(x) of the University Hand Book Pt. II (amended to date) revised the existing panel of examiners (vide Appendix-A). It was Further resolved to recomend that till the batch admitted in 1979 becomes eligible to appear in II M.B.B.S., examination for Pathology and Microbiology, the external examiners for II M.B.B.S. examination shall be from combined department of Pathology and Microbiology in order to maintain uniformity of the standard of examination at the under-graduate level.

When the current batch appears in II M.B.B.S. examination Pathology and Microbiology, a separate panel should be drawn for examiners in Pathology and Microbiology separately so that the sections A and B of papers I and II can be examined by the examiners in respective speciality i.e. the paper in Microbiology section A shall be examined by Internal examiner (Professor/Reader in Microbiology) and Section B by the external examiner (Professor of Microbiology). Likewise Paper II Section A will be assessed by Internal examiner in Pathology and section B by the external examiners in Pathology.

(3) The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes as under :-

(i) Second M.B.,B.S. Examination May, 1983 :-

No change in the detailed syllabi, However, the committee *resolved to recommend that* Under the Scheme of Examination in the subject of Pathology and Microbiology the Passing in theory and Practical examination's separately should be made compulsory instead of jointly.

(ii) M.D. Examination December, 1982 :-

In this connection the Committee also considered the letter No. Path/679, Dated the 1st August, 1979, received from Dr. O.P. Gupta, Prof. & Head of the deptt. of Pathology, R.N.T. Medical College, Udaipur, *Vide Appendix-II.*

Taking into consideration the letter of Dr. O.P. Gupta, the committee *resolved to recommend* that the nomenclatures of the papers of M.D. (Pathology) and M.D. (Microbiology) be re-written so as to read as under :-

M.D. (Pathology) :-

Paper I —Applied Basic Medical Sciences including microbiology and General Medicine.

Paper II —Pathology (General & Systemic)

Paper III —Pathology (Hematology, Clinical Pathology, Cytology and Histochemistry).

Paper IV —Essay (Recent advances in Pathology).

M.D. (Microbiology): (Only Medical graduates are eligible)

Paper I —Applied Basic Medical Sciences including Pathology & General Medicine.

Paper II —Microbiology (General Bacteriology immunology, Parasitology & Mycology)

Paper III —Microbiology (Systemic Bacteriology and virology).

Paper IV —Essay (Recent advances in Microbiology and immunology).

(iii) Post graduate Diploma in clinical Pathology Examination of May, 1982—No change.

(iv) Post graduate Diploma in Microbiology Examination of May, 1982—No change.

(4) The Committee *considered and approved* the plan of thesis of the following candidates who have applied for registration of the their thesis for the examination mentioned against each :—

1. -Dr. (Mrs.) Sunita Chadda. (M.D. Pathology & Microbiology)
2. Dr. (Mrs.) Leela Chhangani —do—
3. Dr. (Mrs.) Mridula Kamthan. —do—

The meeting ended with a vote of thanks to the Chair.

Sd/-  
(Dr. M.L. Sharma)  
Convener.

## APPENDIX—A

### PANEL OF EXAMINERS

#### List of Internal Examiners :

1. Dr. D.P. Gupta.
2. Dr. O.P. Gupta.
3. Dr. B.C. Sangal (Gone abroad)
4. Dr. K.N. Sachdev (When eligible recommended by the University)
5. Dr. M.L. Sharma
6. Dr. H.N. Mangal.
7. Dr. K.C. Joshi.
8. Dr. J.S. Mathur.
9. Dr. H.L. Arora.
10. Dr. K.R. Joshi.
11. Dr. (Mrs.) K. Gangwal
12. Dr. (Mrs.) K. Saxena.
13. Dr. I.N. Ramdeo.
14. Dr. K.K. Sharma.
15. Dr. A.K. Dhruv.
16. Dr. (Mrs.) S. Jain.

For other staff members the University is requested to get the list of eligible readers from various Medical Colleges and compile it accordingly.

### EXTERNAL EXAMINERS

#### P.G. PATHOLOGY

- |                       |  |
|-----------------------|--|
| 1. Dr. H.D. Tandon    | Professor & Head of Pathology Deptt. All India Institute of Medical Sciences, New Delhi. |
| 2. Dr. N.C. Nayak     | Professor of Pathology, A.I.I.M.S., New Delhi.   |
| 3. Dr. B.N. Dutta     | Professor & Head of Pathology, Post-graduate Institute of Medical Sciences, Chandigarh.  |
| 4. Dr. V.S. Rajvanshi | Professor & Head of Pathology and Microbiology, Medical College, Kanpur                  |
| 5. Dr. Kamla Chandra  | Professor of Pathology, Maulana Azad Medical College, New Delhi.                         |
| 6. Dr. T.N. Mehrotra  | Professor & Head of Pathology Deptt. Medical College, Allahabad.                         |
| 7. Dr. C.L. Jhala     | Professor & Head of Deptt. of Pathology, B.S. Medical College, Ahmedabad                 |

- |                           |  |
|---------------------------|--|
| 8. Dr. B.B.L. Mathur      | Professor & Head of Pathology, and Medical College, Baroda.                        |
| 9. Dr. H.S. Shah          | Professor of Pathology, Municipal Medical College, Ahmedabad.                      |
| 10. Dr. P.L. Tandon       | Professor & Head of Pathology, Medical College, Bhopal.                            |
| 11. Dr. J.N. Monga        | Professor & Head of Pathology, Medical College, Gwalior.                           |
| 12. Dr. M.M. Arora        | Professor & Head of Pathology, Medical College, Indore.                            |
| 13. Dr. N.L. Verma        | Professor of Pathology, Medical College, Patna.                                    |
| 14. Dr. I.M. Gupta        | Professor & Head of Pathology, Medical College, Banaras Hindu University, Banaras. |
| 15. Dr. B.R. Prabhaker    | Professor & Head of Pathology, Medical College, Amritsar.                          |
| 16. Dr. J.C. Gupta        | Professor of Pathology, Medical college Jabalpur.                                  |
| 17. Dr. Shreedhar Agarwal | Professor of Pathology, Medical college Raipur.                                    |
| 18. Dr. G.C. Mahrotra     | Professor & Head of Pathology, Medical College, Rohtak.                            |
| 19. Dr. S.N. Dubey        | Professor of Pathology, Medical college Banaras Hindu University, Banaras.         |
| 20. Dr. K.D. Sharma       | Professor of Pathology, Dean Grant Medical College, Bombay.                        |
| 21. Dr. R.R. Bhagwat      | Professor & Head of Pathology, Medical College, Rewari.                            |

#### Microbiology (P.G.) :

- |                       |  |
|-----------------------|--|
| 1. Dr. L.N. Mohapatra | Prof. & Head, Deptt. of Bacteriology, All India Institute of Medical Science, New Delhi.     |
| 2. Dr. Ashok Bal      | Prof. & Head, Deptt. of Bacteriology, Medical College, Aligarh, Aligarh University, Aligarh. |
| 3. Dr. K.B. Sharma    | Prof. & Head of Microbiology, Lady Harding Medical College, Delhi.                           |
| 4. Dr. R.K. Saigal    | Prof. & Head of Microbiology, Medical College, Patiala.                                      |
| 5. Dr. T.D. Chug      | Prof. & Head Microbiology, Medical College, Rohtak.  |

- |                     |  |
|---------------------|--|
| 6. Dr. S.C. Tyagi   | Prof. & Head of Microbiology, Medical College, Amritsar.               |
| 7. Dr. D.S. Agarwal | Prof. & Head of Microbiology, Maulana Azad Medical College, New Delhi. |

**Under-Graduate :**

- |                           |   |
|---------------------------|---|
| 1. Dr. M.L. Malhotra      | Prof. of Pathology, Medical College, Meerut.                      |
| 2. Dr. R.K. Arya          | Prof. of Pathology & Micro, Medical College, Jammu.               |
| 3. Dr. B. Lahiri          | Prof. of Pathology, Medical College, Agra.                        |
| 4. Dr. C.V. Dixit         | Prof. of Pathology, B.J. Medical College, Ahmedabad.              |
| 5. Dr. Godbole            | Prof. of Pathology, Medical College, Surat.                       |
| 6. Dr. H.K. Kaul          | Associated Prof. of Pathology, Medical College, Srinagar.         |
| 7. Dr. S.P. Tyagi         | Prof. of Pathology, Medical College, Aligarh University, Aligarh. |
| 8. Dr. P.S. Manjrekar     | Prof. of Pathology, Medical College, Indore.                      |
| 9. Dr. Jagdish Chandra    | Prof. of Clinical Pathology, Medical College, Patiala.            |
| 10. Dr. (Mrs.) H. Saxena. | Prof. of Pathology, Medical College, Kanpur.                      |



the University, which already has all the names as here been shown in the attached Appendix-A, is good enough for the panel of examiners. However, if some of the names are not there is the old list, which may now please be added for this list of Appendix-A and final list would be that old one, already lying with the University. Further the note given by the Committee under the fresh list should also not be taken into consideration, because there are always paucity of internal examiners and to rotate from one internal as internal to the other would not only create chaos and confusions but shall also delay the examination. In the past, cases are not wanting where considerable delay in holding the examinations and much favouritism was shown by the internal at his own centre in comparison to the other centre where he is being sent as an internal and there has been a lot of undue pressures. As the internal being local person of the state as would be, evident from the incident which came to the notice of the University as to how one internal of Jodhpur, when sent to Bikaner as internal pressurised for giving Honours in the subject to one of the son of the then Principal's which created a topic of much discussions and criticism in the University and that's why the examiners committee resolved not to appoint internal of his own centre to another centre and rotate them and in this subject, external examiner would act as internal examiner at the centre, where there is no qualified eligible internal examiner available.

(3) The Committee *recommended* courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any as follows :-

(i) Second M.B.B.S. Examination, May, 1983 :—

(a) The Committee recommended that under the scheme of examination the minimum pass marks under the subject of Forensic Medicine should be 50% in Pra-

cticals and as well as in theory separately instead of 50% in aggregate. The approval of the Medical Council of India be obtained in this regard.

(b) The following books be *inserted* under reference books in the Syllabus:-

1. GRADOHWL : Legal Medicine.
2. TEDISCHI : Forensic Medicine (Three volume)

(4) The Committee *resolved to recommend* that in order to have more trained qualified persons in the subject of Forensic Medicine a post graduate course be started and the Govt. be requested to take necessary steps at an early date for starting the post graduate course at least at one of the centre of the Medical College of the state.

The meeting ended with a vote of thanks to the Chair.

Sd/- (Dr. B.L. Asawa)  
Convener

## APPENDIX-'A'

LIST OF EXAMINERS FOR FORENSIC MEDICINE  
EXAMINATION, 1980.

## Internal :

1. Dr. Asawa, B.L. M.D. (F. Medicine)  
Reader and Head-Medical  
College, Ajmer.
2. Dr. Gupta, B.P., M.D. (F. Medicine)  
Reader and Head Medical  
College, Udaipur.
3. Dr. P. Dayal, M.D. (F. Medicine)  
Reader and Head-Medical  
College, Jodhpur.
4. Dr. M.R. Goyal, M.S. (Surgery)  
Reader and Head,  
Medical College, Jaipur.

*\*\*No person of outside Rajasthan should be included as Internal Examiner.*

## External :

1. Dr. S.N. Agrawal,  
Head, Lady Harding Medical College, New Delhi.
2. Dr. B.B.L. Agarwal,  
Prof. and Head, Medical College, Rohtak.
3. Dr. C.S. Gupta,  
Prof. and Head, Medical College, Agra.
4. Dr. D.R. Kothari,  
Prof. and Head, Municipal Medical College, Ahmedabad.
5. Dr. S.P. Yadav,  
Head, K.G. Medical College, Lucknow.
6. Dr. V.B. Sahai, Prof. and Head,  
Medical College, Allahabad.
7. Dr. Iqbal Ashraf, Prof. and Head,  
Medical College, Aligarh.
8. Dr. J.M. Sharma, Prof. and Head,  
Goa Medical College, Panji.
9. Dr. U.P. Varma, Prof. and Head,  
P.W. Medical College, Patna.

10. Dr. Girish Mehanti, Prof. and Head,  
Medical College, Gohati.
11. Dr. K.I. Mathurani, Prof. and Head,  
Medical College, Kanpur.
12. Dr. Hiresb Chandra, Prof. and Head,  
Medical College, Bhopal.
13. Dr. Kartar Singh Rai, Prof. and Head,  
Medical College, Patiala.

\*External examiners should be called as per serial order.

MINUTES OF THE MEETING OF THE MEDICAL EDUCATION AND RESEARCH COMMITTEE IN PHARMACOLOGY HELD ON THE 22ND SEPT., 1979 IN THE UNIVERSITY OFFICE (VICE-CHANCELLOR'S SECTT.—NEW BUILDING), JAIPUR.

Present :

1. Dr. K.P. Singh
2. Dr. S.K. Sharma (Convener)
3. Dr. M.M. Mahawar (Special-invitee).

(1) Under statute 42-E(4) of the University Hand Book Pt. II, Dr. S.K. Sharma, Prof. and Head of the Deptt. of Pharmacology, J.L.N. Medical College, Ajmer *was appointed* as Convener of the Medical Education and Research Committee in Pharmacology, for the fresh term of three years ending on the 16th Aug., 1982.

(2) The Committee revised the existing panel of examiners in the light of the statements of qualifications and teaching experience etc. of teachers received from affiliated Medical Colleges and other Universities for inclusion in the revised panel of examiners for the year.

(3) The Committee recommended courses of study and text books in the subject for the following examinations together with the relevant additions and/or alterations to the Regulations and Ordinances and Statutes, if any :-

(i) *Second M.B.B.S. Examination, May, 1983 :-*

No change in the syllabus. However, some printing errors were corrected in the booklet accordingly.

(ii) *M.D. Examination, December, 1982 :-*

The existing nomenclatures of papers I and III *be reworded* so as to read as follows :

Paper I —General Pharmacology, Systemic Pharmacology, Mechanism of drug action.

Paper III—Biochemical Pharmacology, Recent advances and History of Pharmacology.

(iii) *M.Sc. (Med.) Examination, December, 1982 :-*

No change.

With regard to the above, the committee, however, observed and/or reiterated as under :-

- (I) The recommendation No. 4 (VII) passed by the Board of its meeting held on the 29/30th Sept., 1978 together with the revised scheme as suggested by the M.R.E.C. be referred to the Medical Council of India for its consideration and insertion in its recommendations.
- (II) The Course content of Pharmacology as adopted by the M.C.I. for the under graduate Medical Education under VIII-Phase II (Paraclinical/clinical subjects) (page 206 of the minutes of B.O.S. dated 31st July/1st Aug., 1978) was discussed and members Unanimously felt that a reference be made to the M.C.I. regarding the inclusion of Pharmacy teaching (comprising of practical and Lecture demonstrations) in order to acquaint the students with the basics of preparation of commonly employed prescriptions in hospitals.

(4) The Committee considered letter No. 25830/M.C./G.S./79-80, dated the 10th Aug., 1979 received from the Principal, and Controller, S.M.S. Medical College, Jaipur suggesting amendments to the scheme of Examination for the Diploma course in Pharmacy. (vide-Appendix-I).

*Resolved to recommend* that the rules laid down by the Pharmacy Council of India and approved by the Central Govt. (1972) under para (d) of 11 for the examination of Diploma in Pharmacy be followed as such with immediate effect.

The Committee also felt that the matter must be thoroughly gone through into and not only the course content and syllabus but also the examination pattern by a committee consisting of :—

1. Dr. S.K. Sharma (Convener)
2. Dr. F.S.K. Barar
3. Dr. K.P. Singh
4. Dr. N.K. Gurbani—Head of the Deptt. of Pharmacy.

The recommendations of the committee be treated as the recommendations of the M.R.E.C. and be placed before the Board of Studies in Medicine and Pharmaceutics directly.

(5) With reference to Faculty of Medicine and Pharm. Res. No.7, (vi), dated the 23rd/24th Nov., 1977 read with B.O.S. in Medicine and Pharm. Res. no. 4, dated the 17th/18th Oct., 1979, the committee *considered* the draft common scheme of Examination and detailed syllabi for the M.Sc. (Med.) examination received from Dr. F.S.K. Barar, Prof. and Head of the Deptt. of Pharmacology, S.M.S. Medical College, Jaipur as contained in his letter No. 590/Pharm/79, dated the 3rd July, 1979 (vide Appendix-II).

In this connection the committee also considered letter dated 17th Aug., 1979 received from Dr. S.K. Sharma, Prof. and Head of the Deptt. of Pharmacology, J.L.N. Medical College, Ajmer (Vide Appendix-III).

Resolved to *recommend* that draft of Dr. Barar be accepted with the following additions/alterations :-

(i) *Under I Eligibility for admissions :*

The degree B.Sc. *be deleted* and substituted by B.Sc. (Med) in the first line.

(ii) *Under-III-Training*, the para 1 *be substituted* by the following :-

“In Pharmacology the duration of training would be 1½ academic years after B.Sc. (Med) B.V.Sc. and A.H. or B.D.S., 2 academic years after M. Pharm; 3 academic years after B. Pharm. The candidates shall be required to get themselves registered as Post-graduate students with the University at least two academic years before the examination, except in case of B.Sc. (Med.) B.V.Sc. and A.H. or B.D.S. where this period shall be one and half academic years”.

(iii) *Under III Training*, the para 3 *be substituted* by the following :-

“The B. Pharm or M. Pharm candidates shall attend a course of Lectures, Lecture Demonstrations, etc. as

prescribed for B.Sc. (Med.) course for a period of 1½ years first to be followed later on by the postgraduate training programme where the candidate shall attend courses of Lectures, lecture demonstrations etc. of at least 4 months duration as prescribed by the University from time to time. This four months course of lectures and Demonstrations shall be held in two parts, each 2 months duration which shall generally be held in the months of March/April and September/October. The course shall be held only in the institutions which are recognised and affiliated by the University for the particular subject. During this period, the candidate shall also attend a course of at least 6 lecture demonstrations in the Principles of statistics as applied to Medical Science and Research."

(iv) Under the heading III-Training after para 3, insert a new para 4 as under :-

4. "All the candidates will attend a course and lectures in Pathology and Microbiology and should pass in written and oral examination in it before they take up main part II examination in Pharmacology (of paper II of part I examination.)

(v) Examination and Assessment. (a) The scheme of examination be reworded so as to read as under :-

*The M.Sc. (Med.) Pharmacology examination shall consist of Two Parts viz., Part-I and Part-II :-*

*Part-I Examination: Basic Science.*

Paper I—Anatomy, Physiology & Biochemistry  
—50 marks.

Paper II—Pharmacology, Pathology & Microbiology  
—50 marks

The last para be substituted as under :—

"The part I examination shall be held on completion of one and a half years stay in the Department. B.Sc. (Med.), would be exempted from appearing in paper-I of part I



examination, B.D.S. or B.V.Sc. and A.H. candidates would be exempted from appearing in both paper I and paper II of part I examination, while M. Pharm candidates may be exempted from appearing in Pharmacology section of paper II of part I Exam. provided they have prove to have done pharmacology as a special subject in M. Pharm.

The meeting ended with a vote of thanks to the Chair.

*Sd/-*  
(Dr. S.K. Sharma)  
*Convener.*

## APPENDIX-I

*(Ref. Res. No. 4 of these minutes).*OFFICE OF THE PRINCIPAL, S.M.S. MEDICAL COLLEGE,  
JAIPUR.

No. 25980 M.C./G.S./79-80. Dated, Jaipur the 10th Aug., 1979.

The Registrar,  
University of Rajasthan,  
Jaipur.*Sub :-* Diploma in Pharmacy Examination—Amendment in  
the Scheme of Examination.

Dear Sir,

Kindly refer to ordinances relating to the Diploma in Pharmacy Examination, particularly O.278-H I and O.278-H IV. This scheme is inconsistent with the scheme of examination as laid in the Education Regulation 1972 of Pharmacy Council of India, according to present scheme of the University there is a provision of main examination and supplementary Examinations and candidates failing in not more than three subjects theory and/or practical may appear at the supplementary examination in the subject(s) in which the candidate failed. If the candidate again fails in one or more subjects in which he appears at the supplementary examination he will be required to appear in all the subjects as a regular candidates.

However, the education Regulation 11(d) of the Pharmacy council of India, states a student who fails in the final examination for Diploma in Pharmacy (Part I) may, at his option take the examination in parts, in one or more subjects in which he has failed, or in whole, on the condition that he passes in all the subjects prescribed for the examination in three consecutive examinations, or within a period of two years, including the examination at which he first appeared. If he does not pass the full examination within a period of two years as mentioned above, he shall have to take whole examination in all the subject at the time when he next appears at the examination. This particular reference was pointed out to us by the Inspectors of the Pharmacy Council of India during the Inspection of the course in the July, 1979.

Therefore, it is suggested that a deep consideration be given this matter at your end and necessary steps be taken to amend the present scheme of examination to make it in the consonance with the Education Regulations of the Pharmacy council of India. If necessary, a committee/sub-committee constituted to examine the matter thoroughly and give its recommendation to the University. It would

be indeed better to switch over to the scheme as prevalent in the other examination of the Medical Faculty i.e. two examinations per year, one in the month of May and other in the month of December.

Thanking you,

Yours faithfully,

*Sd/-*  
*Principal and Controller.*

## APPENDIX—II

( Ref. res. No. 5 of the M.E.R.C. in Pharmacology  
Dated 22nd Sept., 79 )

From,  
Dr. F.S.K. Barar,  
Professor and Head,  
Department of Pharmacology,  
S.M.S. Medical College,  
Jaipur.

No, 590/Phar./79 ,

Dated 3-7-79

To,  
The Registrar,  
University of Rajasthan,  
Jaipur.

- Ref : (i) University letter No. F. 9-2 (i)/Aca. I/76/4307, dated 17.12.76.  
(ii) Resolution No. 2 (VII) (ii) (a) of the Board of Studies 1976.  
(iii) Principal's office order No. 33719-22/MC/GS/76, dated 29.12.76.

Sub : —Modification of the Syllabus and the Scheme of Examination for the M.Sc. (Med.) Pharmacology degree course.

Sir,

I have chalked out and rationalised the Syllabus and the Scheme of Examination for the M.Sc. (Med.) Pharmacology degree course, as contained in the Resolution of the Board of Studies 1976 cited above. The Examination has been divided in to two Parts viz. Part I and Part II, the Part I Examination to be held by the University after 1½ years stay of the candidate in the Department. The syllabus which I am forwarding herewith is adopted to the syllabus 1977 of the University of Rajasthan.

This also bears reference and continuity to my letters dated 20.5.76 and 27.9.78 to the University of Rajasthan.

Submitted herewith for favour of subjection to scrutiny and further rationalisation by the MERC (Pharmacology) and the Board of Studies.

Thanking you.

Yours faithfully,

Sd/-  
(Dr. F.S.K. Barar)

No. /Pharm/79

Dated : 3/7/1979.

Copy to :—

1. The Principal, S.M.S. Medical College, Jaipur.
2. Prof. T.P.Jain, Convener, Curriculum Committee,  
Deptt. of P.S.M.. S.M.S. Medical College, Jaipur.
3. Prof. K.P. Singh, Head Deptt. of Pharmacology,  
R.N.T. Medical College, Udaipur.
4. Prof. S.R. Sharma, Head, Deptt. of Pharmacology,  
J.L.N. Medical College, Ajmer.
5. Prof. N.K. Khanna, Head, Deptt. of Pharmacology,  
S.N. Medical College, Jodhpur.

*Sd/-*  
Dr. F.S.K. Barar

## Master of Science (Med.) Pharmacology Degree

### (I) *Eligibility for Admission :*

M. Pharm/B. Pharm/ B.V.Sc. and A.H./B. .S./B.Sc. will be eligible for admission to M.Sc. (Med.) Pharmacology.

### (II) *Selection of Candidates :*

For M.Sc. (Med.) selection will be done, strictly on merit by a selection committee consisting of the Head of the Institution and the various guides in the respective subjects. The selection will be done twice a year ordinarily in the months of June and December. If a candidate fails to report to his guide within a period of six months after selection as a postgraduate student, selection shall be cancelled,

### (III) *Training :*

1. In Pharmacology the duration of the training would be one and a half academic years after M. Pharm, three academic years after B. Pharm or B.V.Sc & A.H. or B.D.S. and three and a half academic years after B.Sc. The candidate shall be required to get himself registered as a post-graduate student with the University at least two academic years before the examination, except in case of M.Pharm. candidates where this period shall be one and a half academic years.
2. The candidate will undertake the post-graduate training as a full time postgraduate in the department concerned or as an in-Service trainee in the discipline concerned at a recognised institution for the period specified. Such a candidate shall also be required to participate in the undergraduate training in the subject.
3. During this period of postgraduate training, the candidate shall attend courses of Lectures, lecture demonstrations etc. of at least 4 months' duration as prescribed by the University from time to time. The four months course of lectures and demonstrations will be held in two parts, each of 2 months' duration which shall generally be held in the months of March/April and September/October. The course shall be held only in the institutions which are recognised and affiliated by the University for the particular subject. During this period, the candidate shall also attend a course of at least 6 lecture demonstrations in the principles of statistics as applied to medical science and research—

### (IV) *Examination and Assessment :*

The M.Sc. (Med.) Pharmacology examination shall consist of two parts viz. Part I and Part II.

*Part I Examination : Basic Sciences.*

Paper I : Anatomy, Physiology and Biochemistry	—50 Marks.
Paper II : Pharmacology, Pathology and Microbiology	—50 Marks.

The Part I Examination shall be held on completion of one and a half years stay in the Department. M.Pharm. candidates would be exempted from the Part I examination.

Candidate shall not be permitted to avail of more than three attempts at the M.Sc. Part I examination. Non-appearance at the M.Sc. Part I Examination shall be counted as an attempt. Failure at three attempts in M.Sc. Part I Examination shall debar the candidate from further pursuance of the course.

The following are the syllabi for M.Sc. Part I Examination.

## 1. ANATOMY

1. Introduction :—Animal Cell, General consideration of bone and cartilage, articulations and muscles.
2. Embryology :—General embryology—Spermatogenesis and Oogenesis. Heredity and Human Genetics. Fertilisation and Segmentation of ovum. Foetal membrane and placenta. Development of individual systems.
3. Osteology :—General idea of all the bones of human skeleton.
4. Extremities :—A gross study of muscles: blood vessels, nerves and joints.
5. Thorax :—Intercostal spaces. Pleura, Pericardium and contents. Mediastinum and contents. Diaphragm. Mechanism of respiration. Applied considerations.
6. Abdomen :—Anterolateral Abdominal wall with its applied importance. Abdominal cavity—Its contents organs, vessels, nerves and lymphatics. Autonomic nervous system. Perineum, Male and female pelvis. its contents and its applied considerations.
7. Head and Neck :—Study of the skull as a whole. Orbital cavity and contents, salivary glands, blood vessels, cranial nerves. Gross study of pharynx, larynx, nasal cavity and ear.
8. Central nervous system :—Spinal cord—Tracts, coverings and blood supply. Medulla oblongata, Pons, Cerebellum, Midbrain and its internal structure, functional significance and connections. Third, Fourth

and lateral ventricles. Forebrain—Internal structure functional significance and connections. Choroid plexus. Coverings and blood supply of brain. Chief nerve tracts Pyramidal and extra Pyramidal systems.

9. Autonomic nervous system :—Parasympathetic and sympathetic Systems.
10. Ductless Glands :—Gross anatomy of all the ductless glands.
11. Dissection :—Dissection and study of the dissected parts to supplement the theoretical knowledge,
12. Histology :— Study of the histological structure of the various tissues of the body.

## 2. PHYSIOLOGY

1. Fundamental phenomenon of life, cells, tissues and organisation of the body.
2. Blood—Its composition and functions, blood volume, plasma proteins and its functions, Coagulation of blood, Blood groups, Transfusions, haemorrhage and shock, Origin of blood cells, Bone marrow. Haemoglobin and its derivatives.
3. Cardiovascular system :—Properties of cardiac muscle, origin and initiation of heart beat, Cardiac cycle, Cardiac out-put Heart sounds, Regulation, Blood, pressure, vasomotor control and Regional circulation.
4. Respiratory System :—Mechanics of respiration, Uptake of Oxygen, carbondioxide carriage, Anoxia and Regulations of respiration.
5. Digestive System :—Balanced diet, food, nutrition, Vitamins various secretions of the digestive tracts, their functions movement of the alimentary canal and absorption.
6. Excretory System :—Structure of kidney, formation of urine, Physiology of micturition, Body temperature regulation, structure and functions of skin, Body fluids and their regulation.
7. Nervous System :—General features of the nervous system, structure and functions of spinal cord, Posture and Equilibrium, Functions of brain stem, Corpus striatum, thalamus, hypothalamus, functions and connection of Cerebellum and Cerebrum, Autonomic Nervous system.



8. Special Senses :—Physiology of vision, hearing, taste and smell.
9. Endocrines and Reproduction :—Physiology of various endocrine glands, male and female sex hormones, menstruation, ovulation and physiology of pregnancy.
10. Muscle and Nerves :—Structure, chemistry of muscular contraction.

Practical :—Adequate practical training to be given in haematology, experimental and Human Physiology.

### 3. BIO-CHEMISTRY

Elementary constituents of protoplasm, Chemistry of proteins, carbohydrates and lipids and their metabolism, mineral metabolism, Enzymes, composition of body tissues and body fluids, Study of the following phenomena and their practical applications to Physiological processes :—surface tension, osmosis, colloidal state, H-ion concentration, permeability of cell membrane, Elementary practical exercises based on the above.

### 4. PHARMACOLOGY

*General Pharmacology* :—Definitions, sources of drugs, chemical nature of drugs, routes of drug administrations, Dosage forms, pharmacodynamics of drugs, mechanisms of drug actions, dose response relationship, development of new drugs.

1. *C.N.S.* :—Anaesthetics, hypnotics, analgesics, psychotropics, anticonvulsants, stimulants.
2. *C.V.S.* :—Cardiac glycosides, antiarrhythmics, vasodilators, antihypertensives and hypolipædemic drugs.
3. *Autonomic nervous system, skeletal muscle and autotoxins* :—Cholinergics, antimuscarinics, adrenergics and antiadrenergics, ganglion stimulants and depressants, muscle relaxants, autotoxins.
4. *Endocrines* :—Hormones of pituitary, parathyroid, alpha and beta cells, Iangerhans, adrenal cortex and ovaries and testes, Particular emphasis will be made on drugs useful in family planning.
5. *Genitourinary* :—Water balance, Diuretics, and anti-diuretics, Oxytocics.
6. *Antimicrobials* with particular reference to mechanism of action, resistance and some important toxicities.
7. *Haematinics*, coagulants and anticoagulants, plasma-volume expanders.
8. Heavy metal antagonists.
9. Sera and vaccines.

## 5. PATHOLOGY

Degenerations :—Etiology and histopathology.

Necrosis and gangrene.

Inflammation :—Causes and factors involved in the process.

Granulomas :—Characteristics of tuberculous and syphilitic inflammations. Repair.

Circulatory disturbances to include shock, oedema, congestion haemorrhage, thrombosis, embolism and infection.

Atrophy, hypertrophy and hyperplasia.

Atherosclerosis, Rheumatic and bacterial endocarditis.

Differentiation between benign and malignancy.

Carcinogenesis.

Anaemias and leukaemias.

Adequate exercises to be arranged for practical demonstrations, of the above features.

## 6. MICROBIOLOGY

Taxonomic position of bacteria, fungi, viruses and animal parasites, Mode of infection.

Morphology and biological characters of common human bacterial pathogens to include pyogenic cocci, members of Enterobacteriaceae, treponemes and leptospirae, brucella spp. and of the causative organisms of anthrax, tetanus and gas gangrene and mycobacteria, rickettsiae and chlamydiae (Basophilic viruses).

Immunity :—Process of immunisation, methods of artificial immunisation (Vaccines and antisera) and immune tolerance.

Basis of immediate and delayed hypersensitivity.

Bacterial genetics to include phenomena of gene-recombination, transformation and transduction.

General properties of viruses ;—Isolation and identification of the common viruses to include Picorna viruses, myxoviruses, Pox group of viruses, measles and hepatitis.

*Part II Examination : Pharmacology.*

The M.Sc. (Med.) Pharmacology Part II Examination shall consist of:

- (a) Thesis
- (b) Written papers; and
- (c) Practical and Oral examination.

## (A) Thesis :

1. Each candidate will submit plan for thesis/dissertation on the proposed subject through his guide and the Head of the Institution to the University of Rajasthan for registration of the subject six month before the date of submission of the thesis/dissertation. The thesis/dissertation. The thesis/dissertation will be submitted to University at least 4 months before the date fixed for the examination. In exceptional circumstances the thesis could also be accepted atleast 3 months before the date fixed for the examination on the recommendation to that effect made by the guide and the Principal.
2. No candidate will be permitted to change the subject of his thesis/dissertation without prior approval of the University.
3. The presentation of material in the thesis should be precise and concise and the number of pages should as far as possible not exceed 100. The Thesis/dissertation shall embody the results of candidate's own work. This work shall include precise methods of investigations. He will be required to submit 3 type written copies of the thesis/dissertation prepared under direction and guidance. Approval by the examiner of the Thesis submitted by a candidate shall be pre-condition for his admission to the written part of the examination. The thesis shall be evaluated by the two external examiners of the branch concerned. If the thesis is rejected by any one of the two examiners, it shall be referred to a third examiner whose judgement shall be treated as final for the purpose of permitting the candidate to appear at the P.G. Examination. In case the thesis submitted by the candidate is rejected by both the examiners, the candidate shall be asked to submit a fresh thesis/dissertation."
4. A candidate, who has submitted his thesis/dissertation once and the same has duly been approved by the examiners, will not be required to submit a fresh one if he/she reappears for the examination in the same branch on a subsequent occasion. Thesis/dissertation may also form the basis of the oral examination and due credit may be given for the same. The examiner may also inform the University about any outstanding thesis in a particular branch. The approved thesis or dissertation will be the property of the University and could be published with the permission of the University.

5. If a candidate seeks admission to examination in any other branch he shall be required to submit a fresh thesis/cisertation.

(B) Written Papers (Theory Eaminations) :

1. There shall be three papers in all branches for M.Sc. (Med.) examination, each of three hours duration.
2. Paper I will be set by one external examiner. Paper II will be set by another external examiner. Paper III will be set by one of the two external examiners of Paper I and II by rotation. The external examiner, who is the Paper setter of Paper I or Paper II and III will send these papers to the Seconed external examiner who is Paper setter of Paper I or II and III.

Pattern of question to be set and answered shall be as follows :—

Name of Paper	No. of questions to be set	No. of questions to be answered
Paper I	3	3
Paper II	3	3
Paper III	3	3

3. Papers I and II will be evaluated by the respective external examiners. Paper III will be evaluated by the internal examiner.
4. The three papers in the M.Sc. (Med.) Pharmacology branch shall be as given below :

*Branch III—Pharmacology.*

Paper I—General Pharmacology (including Systemic Pharmacology) and Mechanism of action.

Paper II—Experimental Pharmacology Bio-assay and Bio-statistics.

Paper III—Recent advances, Bio-Chemical Pharmacology and History.

5. *Practical and Oral Examination :*

There shall be a practical and oral examination conducted by one internal examiner and two external examiners. It shall be an overall assessment of the candidate in both the theoritical and practical aspects of the subject.

The following is the syllabus for Part II Examination :

- (a) *General Pharmacology* : Definition and scope of pharmacology and its relations to other subjects and

branches of biology, as the study of the reactions of the living material to the pharmacological agents.

Application and administration of Pharmacological agents their absorption, distribution and fate in the body. Excretion of the agents and its practical significance. Dose and factors which modify dose, L.D. 50 E.D. 50, therapeutic index.

Meaning of pharmacological action. Manifestations and consequences of action. Mechanism of action. Pharmacogenetics.

- (b) *Chemical and biochemical pharmacology* : The relationship between physical and chemical properties of the agents and their pharmacological activity. Chemical methods of detection and estimation of the common drugs and poisons in the biological material.

Role of enzymes in modifying action and toxicity of drugs effect of drugs at the cellular and intracellular sites. (drugs action in biochemical level).

- (c) *Special and systemic Pharmacology* : It shall include the study of the pharmacological actions on the lower forms of life, micro-organisms and on the different systems of the various animals, of official (pharmacopoeial) and non-official drugs in general use, and of common poisons.
- (d) *Experimental Pharmacology* : Method of studying the actions of drugs and poisons on the lower and on the different systems of the higher organisms and the methods of locating their sites of actions, Methods and principles of bioassay and of biological standardisation. Toxicity tests. Experimental evaluation of new drugs.
- (e) *Biostatistics* : Biological standardisation of drugs. Interpretation of the results, including the graphic records of the experiments and their statistical assessment, such as dose-response curves, S.D., S.E., analysis of variance, tests of significance, coefficient of correlations etc.
- (f) The historical development and scope of pharmacology. Recent advances and current researches in pharmacology. The candidates will be expected to have a working knowledge of the usual pharmacological instruments, equipments and care of laboratory animals.

On the whole there will be major emphasis on the experimental aspects of pharmacology.

Sd/-  
Dr. F.S.K.Barar

## APPENDIX III

(Ref. Resolution No. 5 of the minutes of M.E.R.C. in Pharmacology)

From,

Dr. S.K. Sharma,  
Professor and Head.

Deptt. of Pharmacology,  
JLN Medical College, Ajmer.

To,

To Registrar,  
University of Rajasthan,  
JAIPUR.

*Sub* :—Modification of the Syllabus and the Scheme of examination for the M.Sc. (Med. Pharmacology Degree Course.

*Ref* :—Letter No. 40/Pharm/79, dated 4.7.79 from Prof. F.S.K. Barar, Head of the Department of Pharmacology, S.M.S. Medical College, Jaipur.

Sir,

With reference to the above and on a careful perusal, I place below my observations (addenda and/or deletions) to give it a rational and appropriate outlook. These should be first discussed by Medical Education and Research Committee in Pharmacology or appropriate body.

I. Under the heads (I) Eligibility for Admission :—

Add "B.Sc. (Med.) to the list of degrees mentioned Since it is a recognised and approved course of this University.

II. No change.

III. Under the head Training :—

- (i) Part of it should be reworded so as to read "In Pharmacology the duration of training would be  $1\frac{1}{2}$  academic years after B.Sc. (Med.)/B.V.Sc. and A.H. or B.D.S., 2 academic years after M.Pharm; 3 academic years after B.Pharm. and  $3\frac{1}{2}$  academic years after B.Sc. The candidates shall be required to get themselves registered as Postgraduate students with the University at least two academic years before the examination, except in case of B.Sc. (Med.) B.V Sc. A.H. & or B.D.S. where this period shall be one and half academic years."

- (ii) I feel that following should be added in the very beginning :

“The B.Sc./B Pharm. or M.Pharm. candidates shall attend a course of Lectures, Lecture Demonstrations, etc. as prescribed for B.Sc. (Med) course for a period of 1½ years first to be followed later on by the Post-graduate training programme where the candidate (Second line onwards)..... ..medical science and research.”

Further add :—All the candidates will attend a course and lectures in Pathology and Microbiology and should pass in written and oral examination in it before they take up main part II examination in Pharmacology (of. Paper II of Part I Examination.)

#### IV. Examination and Assessment

The note appearing below Paper I and Paper II of part I examination should be modified as follows :—

“The part I examination shall be held on completion of one and a half years stay in the Department. B.Sc. (Med.) would be exempted from appearing in Paper I of Part I examination. B.D.S. or B.V Sc. and A.H. candidates would be exempted from appearing in both Paper I and Paper II of Part I examination; while M.Pharm candidates may be exempted from appearing in Pharmacology section of paper II of part I examination provided they have proof to have done Pharmacology as a special subject in M. Pharm.”

Rest as it is and no change is suggested.

Yours faithfully,

Sd/-  
S.K. Sharma

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN ACCOUNTANCY AND BUSINESS STATISTICS HELD  
TWICE ON 5th OCTOBER, 1979 AND 2nd NOVEM-  
BER, 1979 RESPECTIVELY AT 12.00 NOON IN  
THE UNIVERSITY OFFICE, JAIPUR.

Present :

1. Prof. K.S. Mathur, (Convener)
2. Dr. K.N. Gupta,
3. Dr. V.N. Sharma,
4. Shri K.C. Jain
5. Shri S.R. Sharma,
6. Dr. D.S. Yadav,
7. Dr. H.C. Mehrotra,
8. Shri M.L. Oswal, (Special Invitee)

(Dr. H.C. Mehrotra could not attend the meeting of the Board on the 5th October, 1979).

1. Under Section 34 (4) (iv) of the University Act, Dr. K.N. Gupta, Head of the P.G. Deptt. of Accountancy and Business Statistics, D.A.V. College, Ajmer was elected as member to serve on the Committee for the selection of examiners in the subject other than the Convener of the Board for the 1979-80.

2. It was reported to the Board that no application containing qualifications and teaching experience etc. of the teachers was received from the University Teaching Departments, University Colleges, Affiliated Institutions and other Universities for inclusion in the revised panel of Examiners.

The Board *noted* it, but with regard to preparation of the panel of Examiners in terms of S.25 (a) (2) of the University Hand Book Part II the Board *resolved* that a committee comprising the following be appointed :



1. Prof. K.S. Mathur, (Convener)
2. Shri K.C. Jain,
3. Shri S.R. Sharma,

The committee shall recommend names of examiners for panel subjectwise and paperwise. The University office was requested to obtain information containing subjectwise and paperwise teaching experience of the teachers employed in the colleges affiliated in the Faculty of Commerce/University Department of Accountancy and Business Statistics.

The meeting of the committee be called within a month but not after 27.12.79 the day the term of present board expires.

3. The Board perused the reports of the examiners and set of question papers for the examinations of 1979, and *resolved* that the paper setters be requested not to give all questions from single book.

4. The Board *recommended* courses of study and text book in the subject for various examinations of 1982 together with the relevant additions and/or alterations to the regulations and ordinances. (Appendix I).

The Board further resolved that the copies of the books sent by Rajasthan Hindi Granth Akademi, which were placed on the table, be forwarded to all the members of the Board as per University Act.

5. With reference to the Academic Council Res. No. 11 dated 1st June, 1979 and the Syndicate Res. No. 2. dated 16th June, 1979 the Board felt that no re-arrangements of courses of study for the annual scheme of examination of 1981 was applicable to the Previous examination of 1981 and the Final examination of 1982 consequent upon the abolition of Semester scheme of examination.

6. It was reported to the Board that the Academic Council vide its Res. No. 14 dated the 11th March, 1979 considered a

proposal received from the Director, Institute of Correspondence Studies and Continuing Education as contained in his letter No. D-3/64 dated 24th December, 1978 to the effect that the students for M.A./M.Com. of the Institute be allowed to offer viva voce at the M.A./M.Com. Final Examination and resolved that :

- (i) The facility offering viva-voce be permitted to the students of correspondence studies from the examination of 1979, be also extended for the M.A./M.Com. Examination of 1980.
- (ii) In respect of the matter of allowing candidates to appear in viva voce the collegiate the non collegiate and the students of correspondence institute be treated at par, and option be allowed to all the three categories of candidates in respect of offering viva-voce or a paper in lieu thereof.
- (iii) The matter relating to recommending courses of study of an alternative paper wherever necessary be referred to the Board of Studies under the purview of the faculties, where the viva voce is permissible.

Accordingly the Board *noted* the same and *resolved* that the viva-voce at the M.Com. (Final) Accountancy and Business Statistics examination be made compulsory for collegiate candidates, non-collegiate candidates and students under correspondence studies.

7. The Board noted that the Board of Studies in Accountancy and Business Statistics vide its resolution 4 (a) dated 8/9 September, 1978 had appointed a committee consisting of 8 persons to translate the syllabus in the subject in Hindi.

A meeting of the committee was held on 18/19 September, 1978.

The Board in terms of Resolution No. 4A (ii) (b) of the Academic Council dated 15/16 May, 1979 regarding translation of

syllabus into Hindi version resolved that at present the syllabus should continue to be printed in English only.

8. With reference to Facility of Commerce Res. No. 14 dated 17/18 March, 1979 the Board considered a proposal made shri J.P. Srivastava Inchagge (M.Com.) Institute of Correspondence Studies and Continuing Education, University of Rajasthan, Jaipur. as contained in his letter No. M.C.A./45959-60 dated the 3rd March, 1979 duly forwarded by the Director, of Institute. (vide appendix II).

The Board resolved that the suggestions be incorporated in the syllabus after due modifications.

The meeting ended with a vote of thanks to the chair.

K.S. Mathur.  
(Convener)

## APPENDIX-I

(Ref. Res. No. 4 of the B.O.S. in Accountancy and Business Stat.

- I. Pre-University Examination of 1982 Nochange
- II. Diploma Examinations Not related
- III. Degree Examination :
  - (a) I year TDCoass Course Examina- No. Change  
tion of 1982
  - (b) II year TDC Pass Course Examina-  
tion of 1982

### Core Subject

- 1. Paper— I Financial Accounting in place of Financial and Cost Accounting.
- 2. Matter after 'Bonus Shares' be deleted and the following be added in its place :  
 "Investment Accounts, Accounts for Banking companies and Accounts of Insurance companies (excluding life Insurance corporation).
- 3. Topics 'Material labour' and 'Overhead' alongwith contents be deleted.
- 4. Under Heading 'Books for reference', Name of Books at Seril. No. 6 to 11 be deleted and rest be renumbered accordingly.

### Paper II—Statistical Methods

Under heading 'Index Number and Presentation of data : ' add the following at the end of para :—

'Fisher Is Ideal Index Number and application of time and Factor Reversial Tests.'

### Optional Subjects

- 1. Paper I The present nomenclature 'Quantitative Methods and their applications' be changed as 'Costing and quantitative Methods'.
- 2. The syllabus of this paper wil be as follows :

## Paper I Quantitative Methods

(This paper is divided in two sections. Students are required to attempt atleast two questions from each section).

### Section ,A'

Birth, Death and Reproduction Rates.

Sampling, Meaning Sampling and Non-Sampling Errors;

Sampling Techniques, Preparation of Questionnaires. Statistical Quality Control.

Interpolation, Newton's Method of Advancing.

Differences, Binomial Methods and Legranges Methods.

Time Series—meaning, fitting of trend by the Method of least squares.

### Section ,B'

Sequences and series; AP, GP and HP simple and direct problems only.

Elements of Set theory, Operations on sets and statements.

Matrices.

Simple and quadratic equations.

## 2. Taxation Law and Practice

1. Paper I—Rajasthan and Central Sales Tax Acts and rules under Books recommended under item 5 read as Jain Patni and others in place of Jain.

(b) Under heading Books recommended add the following book at 1-8 :

(b) Chawla and Gupta; Rajasthan & Central Sales Tax, Ramesh Book Depot, Jaipur.

(c) Final Year TDC Commerce Examination 1982.

### Cor Subject

#### 2. Paper II—Auditing

This paper be replaced by a new paper entitled 'Cost Accounting'. syllabus of this paper will be as follows :

1. Costing : Its definition, objects, importance advantages; types of costing.
2. Elements of Cost :
  - (a) Materials : Purchasing, Storing, Issuing and pricing of stores etc.
  - (b) Labour : Recording of time, allocation of wages Job and Time cards, various methods of remunerating labour including various incentive methods.
  - (c) Overhead : Classification, allocation, appointment and absorptions of overheads.
3. Methods of Cost ascertainment : Unit or single output costing, contract and job costing, Process costing (excluding equivalent production) operating costing and reconciliation of cost and
4. Marginal Costing : Meaning, Advantages, uses, BEP P/V ratio, Break even charts and margin of safety and ascertainment of sales and profits at various levels.

#### *Books recommended :*

1. I.C. Gupta and R.C. Trivedi—Study of Cost Accounts
2. M.L. Agarwal—Parivayay Lekhankan.
3. M.L. Oswal and N.K. Maheshwari—Cost Accounts (Hindi Ed.)
4. P.K. Gosh—An Introduction to Cost Accounting (National Publishing House, Delhi).
5. B.K. Bhar—Cost Accounting Methods and Problem (Academic Publishers, Calcutta).
6. N. Sarkar—Principles and Practice of Cost Accounting (Academic Publishers, Calcutta)
7. R.R. Gupta and V.S. Gupta—Coast Accounts.
8. Maheshwari and Mittal—Cost Accounting.

*Books for reference :*

1. N.K. Prasad—Cost Accounting—Principles and Practice.
2. Matz, Curry and Frank—Cost Accounting.
3. Murao—Cost Accounting.

**Optional Subjects**

1. Costing and quantitative Methods paper be replaced with Auditing and quantitative Methods.

Syllabus for this paper will be the same as given at page 2 of Final Year examination of 1978ed syllabus with following modifications :

Unit III (3) delete item (i), and (vi).

2. Taxation Law and Practice :

The following books be added under heading 'Books recommended'

5. O.P. CHAWALA AND B.L. GUPTA—3 Taxes (Ramesh Book Depot, Jaipur.)
6. H.L. JAIN AND PARTNERS—3 Taxes (Ajmer Book Depot, Jaipur).

**IV. Honours Examination :**

*Resolved to recommend* that while determining the division the marks of subsidiary papers may also be included. Regulation 19 may be amended accordingly.

For the 1981 examination of I year Hons. the permission of the Vice-Chancellor in this regard may be obtained and duly notified.

(a) Part-I Examination 1982 No Change

(b) Part-II Examination 1982

Subsidiary Subject Group B

Existing paper Business Communication and Salesmanship be replaced with the paper 'I Elements of Management' as follows :

### Elements of Managements :

Introductory—Meaning, Nature, Scope, Importance of Management in Modern world. The managerial revolution in brief.

Brief historical background of managerial thought—Taylor, Fayol, Mary Parker Follet, Elton Mayo, Human relationship approach. Function of Management Planning, organisation. Coordination, Motivation, Control. Process of Decision Making Scientific management Relationship.

### Honours Subject Paper III :

Financial Accounting.

Under item 3 after re-construction of companies add '(excluding inter company holdings)'.

### V. Post-Graduate Examinations :

(a) M.Com. (Previous) Examination 1982

(b) M.Com. (Final) Examination 1983.

#### Paper I Management Accounting and Financial Control :

Under heading 'Books recommended' Add the following book :

'9 Prof. J.K. Agarwal and R.K. Agarwal (Ramesh Book Depot, Jaipur).

#### Paper III Higher Accounting :

Under heading 'Books recommended' add the following book :

'7 Dr. M.C. Khadewal (Ramesh Book Depot. Jaipur).

#### Paper Taxation Law and Practice :

Under heading 'Books Recommended' correct book No. 16 as following :

'16 O.P. CHAWLA AND B.K. GUPTA An introduction to .....lines '11-Refunds' and '12 Tax credit Certificate' be corrected as 'Refunds Income Tax.'

In line ending with the words 'Hindu Undivided Families' add 'Assessment of Co-operative Societies'.



**Paper VI Managerial Economics and Management :**

Under heading 'Books recommended' add the following Books :

"2 B.L. Ojha (Adarsh Prakshan, Jaipur).

'23 Dr. G.D. Sharma and Surana.

**VI. Post graduate Diploma Examinations :**

(a) Post Graduate Diploma in Cost and Works  
Accountancy :

Part I Examination of 1981	No Change
Part II Examination of 1982	No Change
Part III Examination of 1983	No Change

## APPENDIX II

(Ref. Res. No. 9 of the minutes of B.O.S. in Accountancy and Business Statistics dated 2-11-79).

The Convener,  
Board of Studies,  
Accountancy and Business Statistics,  
University of Rajasthan,  
AIPUR.

No. M.C.A./48068

Dated : 3/3/79

Dear Sir,

In view of the recent development and changes in the Scientific study of Accountancy and Business Statistics as well as Managerial Economics and Management, it is being increasingly felt that without a proper grounding in Mathematics (Elementary as prescribed for C.A. students), it would be well high difficult for the students of commerce to understand the tools and techniques for making an analytical study of Accounting and Managerial problems. The Knowledge of elementary and basic mathematics has also become imperative for advanced learning of these subjects.

It is, therefore, proposed and suggested that Elementary Mathematics may kindly be introduced as a compulsory paper in First Year Commerce and the course content of this paper should be the same as prescribed for the Intermediate courses of C.A.

If the Board of Studies and the Faculty of Commerce take this decision, it is needless to say that students of Commerce would benefited much.

A further suggestion may also be made for some changes in the Scheme of Courses prescribed for Second and Third Year Commerce Examinations. At present the papers of Accountancy both compulsory and optional are as given below :

*Second year*

*Third year*

Compulsory : 1. Financial & Cost Accounting.

1. Income Tax

2. Statistical Methods

2. Auditing

Optional	: 1. C.Q.M.	1. C.Q.M. (Cost Accounting).
	2. Taxation : Law & Practice.	2. Taxation : Law and Practice.

Some consenses has developed, of late, that the second portion of the Paper "Financial Accounting and Cost Accounting" which exclusive covers Cost Accounting from Introduction to Unit Costing should be excluded from this paper and a few new topics of Accountancy which are of immense importance and are not taught at any level from First Year to M.Com. should be included in the course content of this paper.

The second part of the aforesaid paper covering the course of Cost Accountancy so deleted. From this paper may be added in the course content of the optional paper : C.Q.M. (Cost Accountancy) of the III year and this paper may be made compulsory in place of Auditing which is at present second compulsory paper of III year, Auditing should be made an optional paper,

The course content of Second year C.Q.M. (Optional paper) should also be changed. A few topics of this paper can easily be included in the course content of this paper Statistical Mathods (compulsory paper) and in place of such deleted topics. some topics of Higher Mathematics used in Tools of Techniques of Economic Analysis can be included to make the course more regarding and useful.

I hope the foregoing proposals and suggestions would kindly be placed before the Hon'ble members of the Board of Studies for sympathetic consideration and for being recommended to the Faculty for making necessary changes.

Yours faithfully  
Sd/-

J.P. Srivastava  
Incharge ( M.Com. )

Forwarded with the request that the matter may please be duly considered and discussed at the Faculty Meeting for onward transmission to the Academic Council.

Sd/-  
M.L. Mishra,  
Director.

No. M.C.A./48959-60.

Copy forwarded for information and necessary action to :

1. The Dean, Studies in Commerce, University of Rajasthan, Jaipur.
2. The Registrar, University of Rajasthan, Jaipur.

Sd/-  
J.P. Srivastava.

## APPENDIX—I

(Ref. Res. No. 4(A) II (e) of the minutes)

### M.Phil Syllabus for Department of Accountancy and Business Statistics.

#### Paper—I

Research Methodology and Quantitative Techniques : (100 Marks)

1. *Research Methodology* : Concept, defining the problems, designing of the Research project, Drafting of questionnaire, Collection & Tabulation of data, preparation of Report.
2. *Sampling Analysis* : Probability Samples, non-probability samples, Techniques of sampling. small and large, Sampling of attributes, testing of hypothesis, Analysis of variance.
3. *Operations Research* : Meaning and concepts, operations, research techniques, Model Building, Queuing Theory, Simulation, Linear Programming.

#### Paper—II

(Marks 100)

1. Managerial uses of Accounting
2. Decision-making techniques under conditions of certainty and uncertainty.
3. Management Information Systems  
Or  
Management Reporting
4. Cost control and Cost reduction.
5. Management Control (Functions).
6. Financial Appraisal and forecasting
7. Corporate Tax Planning and role of taxes in decision making.
8. Responsibility Accounting.

} It should be one

#### Paper—III

(Marks 100)

#### Accounting Theory :

1. Review of Accounting Theory
2. Accounting and Economic (growth)
3. Social Accounting
4. Accounting for Inflation
5. Human Resource Accounting
6. Corporate Financial Reporting and Disclosure in Financial Statements, Study of IASC Expense drafts.

7. Management Control system including Behavioural aspect.
8. An appraisal of Management methods and performance and efficiency Audit.

Paper—IV

(Marks 200)

1. Dissertation (including Viva-voce)

Dissertation

100 marks.

Viva-voce

100 marks.

### READINGS

#### Paper—I

1. Wessel, Willett & Sitone : Statistics as Applied to Economics and Business.
2. Roberts Weiss : Statistics in Social Research.
3. Lawrence, D. Phillips : Bayesian-Statistics for Social Scientists.
4. Morris, Budin : Statistical Measurement for Economics and Administration.
5. Goode and Hatt : Methods in Social Research.
6. Galtung, John : Theory and Methods to Social Research (London 1970).
7. Moser, CA. and Kalton, G. : Survey Methods in Social Investigation (London 1971).
8. Churchman, C. West : Introduction to Operations Research.
9. Haldey & Whithin, Pert : CPM& Marketing Management & Inventory Control.
10. Sasteni, Mauvice, etc. : Operation Research.

#### Paper—II

1. Van Horne James C. : Financial Management and Policy.
2. Hunt Pearson, Williams : Basic Business Finance Test and Cases.  
Charles M. and  
Donaldson, Gordan.
3. Horngren, Charles T. : Cost Accounting—A Managerial Emphasis.
4. Shillinglaw, Wordon : Cost Accounting—Analysis and Control.
5. Prince, Thomas R. : Information Systems for Management, Planning and Control.
6. Dearden, John & : Management Informations Sys-  
M.C. Fonlon F. Warren tems Text and Cases.

7. Anthony, Dearden and Vancil : Management Control Systems Text, Cases and Readings.
8. Potter D.C. Monval, H.H. and Bates, Stewari. : Tax Planning with Precedents.
9. Reporting Financial data to top management (American Management Association).
10. Walker & Baughn : Financial Planning & Policy (Part-V only).
11. Lewis : "Accounting Reports for Management" (Prentice Hall).
12. Welsch Glenn : "Budgeting, Profit Planning and Control" (Prentice Hall).
13. Anthony : "Management Accounting" (Richard Irwin).
14. Gradner : "Profit Management and Control" (Mc Graw-Hill).
15. Keller : "Management Accounting for Profit Control".

### Paper—III

1. Hendriksen, E. : Accounting Theory—III conis (Richard D. Irwin) 1970.
2. Lonard, William P. : Management Audit : An Appraisal of Management Methods and performance.
3. Rose, T.G. : Management Audit.
4. Daidon, Sidney : Handbook of Modern Accounting (M. Graw Hill) 1970.
5. Enthouen, A.J.H. : Accounting and Economic Development Policy (North Holland) 1975.
6. Epstein, Mare T. and Epstein Joanne B. : An Introduction to Social Accounting and Social Audit (California State University) Los Angeles 1975.
7. Estes, Rolph W. : Corporate Social Accounting.

MINUTES OF THE MEETING OF THE BOARD OF STUDIES  
IN POLITICAL SCIENCE HELD ON 13.10.1979 AT 12.00  
NOON IN THE V.C.'s SECRETARIAT (NEW  
BUILDING), UNIVERSITY CAMPUS, JAIPUR.

Present :

1. Prof. Iqbal Narain, (Convener)
2. Shri A.B. Mathur,
3. Shri V.K. Sharma,
4. Shri C.B. Vijayvargia,
5. Shri G.S. Gill.

1. Under Sec. 34 (4) (iv) of the University Act, the Board elected Shri C.B. Vijayvargia, Lecturer in Political Science, Government College, Sikar as a member other than the Convener, to serve on the Committee for selection of examiners in the Subject for the year 1979-80.
2. The members of the Board of Studies scrutinized the statements of qualifications and teaching experience etc. of teachers, received from the University Teaching Departments, University Colleges, Affiliated Institutions and other Universities for inclusion in the revised panel of examiners and found them in order.

The Board of Studies would, however, like to make it clear that only Political Science teachers should be given examination work and not people who are teaching other allied disciplines. Of course, "Political Science" here includes Public Administration and International Relations which, though



otherwise subject branches of the discipline, have fullfledge departments in some Universities.

3. No comments were offered on the report of the examiners for the reason that, more often than not, they were too sketchy to provide any positive. Similarly no Comments were ofered on the papers guide-line. set last year.

However, the Board of Studies would like to emphasise with all the command at its disposal that the alternative paper to paper V should be printed separately. It has been observed that otherwise a lot of confusion is caused, because the students would pick up questions from both the alternative papers and combine them just because they are printed together.

4. The Board recommended the Courses of study and Text-Books for the following Examinations as under :—
  - (a) The Board of Studies did not recommend any changes in the scheme and syllabi of Pre-University Examinations of 1982.
  - (b) As far as the Political Science Syllabi of First Year B.A. (Pass) course was concerned, the Board of Studies decided to *abolish* the units. The syllabi would, by and large, stand as it is. The Convener was, however, authorised to compare the contents of the syllabi with the models provided by the U.G.C. and make marginal amendments, if any, (For details of the contents of the syllabi after marginal revision, see Appendix-1).
  - (c) As far as Second Year B.A. (Pass) Course is concerned, the Board of Studies again decided

to abolish the units. The study of the theory and practice of the Governments of England, U.S.A., Switzerland and U.S.S.R. were retained. It was decided to add the study of the Governments of Canada or Australia and Kenya as additional alternatives to entry No. 5 where the student was to read any one of the following :—

Japan, West Germany, Argentina or France.

Thus the students could now choose for their studies any one of the following :—

Japan, West Germany, Argentina, France, Canada and Australia or Kenya.

The Board of Studies also thought that aspects of the political Systems to be studied by the students should be spelt out. The Convener was authorised to do so after taking note of some of the U.G.C. models which provide for these details. (For details of the contents of the paper, see Appendix 2.)

- (d) As far as paper II of Second year is concerned, the Board of Studies, again, decided to abolish the unit system. The Board also pointed out that there was a lot of over-lap between the contents of the paper dealing with Indian Political System prescribed here as also the contents of a similar paper at the B.A. (Hons.) and M.A. levels. The convener was authorised to remove this over-lap and there he could also take note of the models recommended in the U.G.C. report on the revision of Syllabi. He was, however, to make only marginal changes in the contents to avoid overlap. (For the revised contents of the paper, see Appendix 3.).

- (e) As far as B.A. (Pass) Final year is concerned, the Board of Studies decided that papers I and II should continue on the same pattern. Except for the abolition of units, no changes were recommended in the contents of the papers as far as paper II of B.A. (Pass) Third year is concerned.
- (f) As far as B.A. (Hons.) syllabi is concerned, the basic scheme is to stand though the units will be abolished.
- (g) As far as the scheme and syllabi of M.A. was concerned, it would remain as it is except for the following modifications :—
  - (i) The optional group-entitled Socialist study group on the pattern suggested in the UGC Report on the Revision of Political Science syllabi will be added. The details of the group are given below :

The group, among others, may be built up around the following courses :—

    - (a) Theory and practice of Marxism.
    - (b) Socialist Transformation and institution building in U.S.S.R. China, Yugoslavia, Vietname Cuba and one of the East European countries.
    - (c) Foreign Policy of Socialist States.
    - (d) Socialist and Communist movements in France, Italy, Indonesia, Tanzania and India.
- (h) The Convener was authorised to revise the contents of Paper VI dealing with Indian Government and Politics in the light of the

UGC report on the revision of Political Science syllabi and particularly ensuring that it did not entirely repeat whatever was already being taught at B.A. (Pass) and B.A. (Hons.) levels. (For details of the revised paper see Appendix-4.).

- (i) There was also a detailed discussion on the M.Phil. syllabi and the general feeling was that an effort should be made to ensure that it did not become a replica of the M.A. scheme and syllabi. Since at the moment the M.Phil. course was being run in the Department of Political Science at the University only, the Department may be permitted by the Vice-Chancellor to introduce such changes as the Department suggests in the light of this general comment and they may later be reported to the next meeting of the Board of Studies for incorporation in the syllabi. It was in the same context that it was pointed out that changes in this case should be permitted to be operative from 1980 itself.
5. The Board of Studies thought that the Hindi version may be prepared later as a closer look at the revision of the syllabi was still necessary in the light of the revision of the syllabi. This task would be completed by the next Board of Study which may then take up the translation work also.
6. The Board of Studies thought that consequent upon the abolition of the Unit system, no re-arrangement of the courses of study was called for. Similarly, consequent upon the abolition of semester scheme of examinations no re-adjustment of courses of study in Political Science was necessary.

7. The Board of Studies in Political Science has already provided alternative paper in lieu of the Viva-Voce examination and as such no further response to the Academic Council Res. No. 14 dated the 14th March, 1979 was necessary.
8. The Academic Council Res. No. 10 (i) dated the 11th March, 1979 which considered a proposal received from Dr. Satyendra Chaturvedi, Convener Board of Studies in Hindi did not apply to the Political Science syllabi as it does not provide for any dissertation at the M.A. level.
9. As far as a paper on Population Studies at the under-graduate level was concerned it could be included as an alternative paper to HICC, General Education etc.
10. The Board of Studies has partly revised the syllabi in the light of the report of the UGC and partially this work would be taken up in the next meeting of the Board of Studies.
11. The Board of studies would like to record with a sense of satisfaction that quite a few of its efforts at the revision of the syllabi earlier had found recognition in the UGC Report itself.

The meeting ended with a vote of thanks to the Chair.

Sd/-  
(Prof. Iqbal Narain)  
Convener  
Board of Studies.

## APPENDIX-I

## B.A. (Pass) First Year Examination of 1982.

## Paper—Principles of Political Science :

Definition, scope, nature and methods of study of Political Science according to traditional and contemporary perspectives; the scientific method and its application to Political Science.

## Political Science and other Social Sciences.

Behavioural Approach : its utility and limitations. Definition and Nature of State—State as an association—State in terms of sovereignty—State in terms of Law—Organic theory of the nature of State. The idealistic theory of the nature of State.

Theories of the origin of State and historical development of the Modern State. The concept of Political System.

The concept of sovereignty—Monistic and Pluralistic analysis of Sovereignty—Concept of Power—Authority and Legitimacy.

State and Society : The absolutist view of State and Nation : Theory of national self—determination—State and Religion—Theory of Secular State.

Functions of the State—Laissez faire and Socialistic theories—the concept of Welfare State.

Forms of Government—Democracy and Dictatorship—Presidential and Parliamentary types—Unitary and Federal forms.

Organisational framework of democracy—party system and pressure groups and public opinion—the problem of minority representation.

Organs of government and the problem of their relationship—legislature. Bi-cameralism, Uni-cameralism and functions of legislature—Executive and its functions—Judiciary and its Functions—Theory of Separation of Powers.

Political concepts : rights and theories of rights. Liberty, its meaning and kinds—Law, its meaning and kinds—liberty and authority—liberty and equality.

Books recommended : As in the earlier syllabus.

## APPENDIX-II

B.A. (Pass) Second Year Examination of 1982.

## Political Science

Paper I Modern Governments :

1. U.K : Sources and nature of the constitution—Crown—Prime Minister and the Cabinet—Structure and role of Parliament and its relationship with the Cabinet—Party system : Parties and their programme—Civil services and its relationship with the Cabinet.
2. U.S.A. : Sources and nature of the constitution—Presidency—Congress and its structure, role and relationship with the President—Supreme Court and the power of judicial review—Political parties and pressure group.
3. Switzerland: Nature of the constitution; Nature of the executive; structure of the legislature and its relationship with the executive. Federal tribunal—party system—theory and practice of direct democracy.
4. U.S.S.R. : The revolutionary legacy—Nature of the constitution—structure and role of party—The constitutional framework and the fundamental rights and duties.
5. The constitution of any one of the following countries :

(i) Japan	(ii) West Germany	(iii) Argentina
(iv) France	(v) Canada	(vi) Australia,
and (vii) Kenya.		

*Books recommended :* As in the earlier syllabus.

## APPENDIX—III

B.A. (Pass) Second Year Examination of 1982.

### Political Science

Paper I—Indian Political System :

Landmarks in India's national movement : 1885-1947-  
The liberal, the extremist and the Gandian phases of  
national movement.

The Constituent Assembly : its structure and approach—  
Nature of Indian constitution.

Outline study of Indian constitution, the Indian Preside-  
ncy—Prime Minister and the Cabinet, Parliament and  
its relationship with the Cabinet—the Supreme Court and  
the judicial review—the amending process—office of the  
Governor and the Chief Minister..

The nature and determinants of Indian policies with  
special reference to caste.

The party system and pressure groups—electoral system  
and elections—India's foreign policy.

*Books recommended :* As in the earlier syllabus.



## APPENDIX—IV

**M.A. Political Science : Indian Government and Politics.**

The approaches of the study of Indian Politics.

The nature of Indian political system with special reference to the theory and practice of federal and parliamentary governments.

Philosophical postulates of Indian political system with special reference to the preamble, fundamental rights and its directive principles of State policy.

The Union executive, Cabinet and the Parliament : the problems of relationship.

The Theory and Practice of judicial review in India.

Bureaucracy, its nature and role in India. Nature of party system in India—political parties : Socio-economic bases, organisation and programme.

Pressure groups in India.

Elections and voting behaviour in India.

Politics of industrial sector with special reference to the politics of trade Unions.

Politics of agrarian sector with special reference to politics of land reforms and peasants movements.

Politics of caste, communalism, language and regionalism.

*Books recommended :* As in the earlier syllabus.

दिनांक 15/16/17 नवम्बर, 79 को आयोजित आयुर्वेद अध्ययन मण्डल को बैठक का कार्यवाही विवरण ।

### उपस्थिति

1. वैद्य	मदन लाल शर्मा,	संयोजक
2. „	वासुदेव शास्त्री,	
3. „	रंगनाथ शर्मा,	
4. „	घनश्याम शास्त्री,	
5. „	मदन कुमार शास्त्री,	
6. „	नरहरि शास्त्री,	
7. „	हनुमत्सहाय शर्मा,	
8. „	अमर नाथ शर्मा,	
9. „	हरिप्रसाद शर्मा,	
10. „	लक्ष्मी नारायण शर्मा	
11. „	मोहन लाल भारद्वाज,	
12. „	दौलत राम चतुर्वेदी,	
13. „	ईश्वर दास स्वामी,	
14. „	हरिशंकर शर्मा, मुजफ्फरनगर	

(दिनांक 16 एवं 17 नवम्बर, 79 को वैद्य हरिशंकर शर्मा तथा 17 नवम्बर, 79 को वैद्य दौलतराम चतुर्वेदी अनुपस्थित रहे) ।

1. दिनांक 23 एवं 24 अगस्त, 79 को सम्पन्न हुई आयुर्वेद अध्ययन मण्डल को बैठक के कार्यवाही विवरण की पुष्टि निम्न अन्त्युक्तियों के साथ की गई । संस्तुति संख्या 5 (ब) पृष्ठ 97 :—

शब्दावली निम्न प्रकार लिखी जानी चाहिये :—

(ब) भारतीय चिकित्सा केन्द्रीय परिषद, नई दिल्ली द्वारा निर्धारित डिप्लोमा पाठ्यक्रमों को मण्डल ने सिद्धान्ततः स्वीकार किया ।

परीक्षा योजना, प्रवेश, आदि तत्सम्बन्धित विषयों के अध्यादेश, नियम, परिनियमों के निर्धारणार्थ मण्डल की गत बैठक दिनांक 26 एवं 27 मार्च, 1979 की निश्चय संख्या

5 (द) (II) द्वारा गठित समिति को अधिकृत किया जावे जिसकी संस्तुति संकाय के समक्ष रखी जावे ।

पाठ्यक्रम के निर्धारणार्थ-परिपद द्वारा प्राप्त पाठ्यक्रम को तत्सम्बन्धित आयुर्वेद शिक्षण एवं अनुसंधान समितियों के समक्ष रखा दिया जावे ।

2. विश्वविद्यालय के अधिनियम की धारा 34 (4) (IV) के अन्तर्गत 1980 की आयुर्वेद संकायान्तर्गत परीक्षाओं के लिये परीक्षक चयन समिति पर संयोजक के अतिरिक्त मण्डल के एक सदस्य के रूप में वैद्य हनुमत्सहाय शर्मा, द्रव्यगुण विभागाध्यक्ष, म०मो०मा० राजकीय आयुर्वेद महाविद्यालय, उदयपुर को निर्वाचित किया ।

3. विश्वविद्यालय के परिनियम 25 (2) (ए) के प्रावधानान्तर्गत परीक्षक तालिका का निर्माण किया गया ।

4. सन् 1979 में सम्पन्न हुई आयुर्वेद संकाय की विभिन्न परीक्षाओं के प्रश्नपत्रों के प्रतिवेदनों का अवलोकन कर निम्नलिखित टिप्पणी की गई :-

प्रश्नपत्रों के निर्माण में घोर अनियमितताएँ बरती गई हैं ।

प्रश्नपत्रों की भाषा नियमानुसार सरल संस्कृत होनी चाहिये ।

प्रश्नपत्र कठिन संस्कृत व पद्यमय संस्कृत में निर्मित करने से अनेक प्रकार की असुविधाएँ छात्रों के सामने आती हैं और कभी कभी अर्थ का अनर्थ हो जाता है । अशुद्धियों से कारण छात्रों को प्रश्न समझने में असुविधा होती है । इसके अतिरिक्त यह भी अनुभव किया गया है कि परीक्षक महानुभाव भी कभी कभी प्रश्न-पत्र का निर्माण विषयेतर कर देते हैं । इस कारण परीक्षा के समय परीक्षा भवन के छात्रों के विरोध और असंतोष का सामना करना पड़ता है ।

टिप्पणीपरांत मण्डल ने यह संस्तुति की कि प्रश्न पत्रों की संवीक्षार्थ एक संवीक्षा समिति (Moderation Committee) का निर्माण किया जावे ।

5. आयुर्वेद संकायान्तर्गत निम्नलिखित परीक्षाओं के अंकित वर्षों के लिये निम्नलिखित आयुर्वेदीय विषयक शिक्षण एवं अनुसंधान समितियों की निम्न निर्दिष्ट दिनांक को आयोजित बैठकों की संस्तुतियों पर विचार विमर्श किया :

(क) परीक्षाएं :-

1. प्री-आयुर्वेद परीक्षा, 1982

2. आयुर्वेदाचार्य (चैचलर आफ आयुर्वेदिक मैडिसिन एण्ड सर्जरी) परीक्षा :—

- (अ) प्रथम वर्ष परीक्षा, 1982
- (ब) द्वितीय वर्ष परीक्षा, 1983
- (स) तृतीय वर्ष परीक्षा, 1984
- (द) चतुर्थ वर्ष परीक्षा, 1985
- (इ) पंचम वर्ष परीक्षा, 1986

3. आयुर्वेद वाचस्पति एम०डी० आयुर्वेद परीक्षा :—

- (अ) खण्ड I (प्रारम्भिक) परीक्षा, 1981
- (ब) खण्ड II (उत्तराद्ध) परीक्षा, 1983

(ख) आयुर्वेदीय शिक्षण एवं अनुसंधान समितियाँ वंछक की दि०

1. संहिता विज्ञान, संस्कृत सिद्धान्त एवं इतिहास विषयक	25/10/79
2. शरीर रचना विषयक	25/10/79
3. शरीर क्रिया विषयक	25/10/79
4. द्रव्यगुण विषयक	25/10/79
5. रसशास्त्र, भैषज्य कल्पना विषयक	26/10/79
6. रोग विज्ञान एवं विकृति विज्ञान विषयक	26/10/79
7. स्वस्थवृत्त विषयक	26/10/79
8. अगदतंत्र विषयक	26/10/79
9. प्रसूतितंत्र, स्त्री बाल रोग विषयक	27/10/79
10. काय चिकित्सा विषयक	27/10/79
11. शल्यतंत्र विषयक	27/10/79
12. शालाक्यतंत्र विषयक	27/10/79

गहन विचार विमर्शपरान्त मण्डल ने उपर्युक्त समिति की संस्तुतियों को निम्न अभ्युक्तियों के साथ स्वीकार करने की अनुमति दी :—

- 1. संहिता विज्ञान, संस्कृत सिद्धान्त एवं इतिहास विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति । परिशिष्ट I

(अ) संदर्भ समिति की निश्चय संख्या 2 ( I ) अ  
प्रथम पत्र और 'द्वितीय पत्र क'—संस्तुतियां आवश्यक  
नहीं है ।

(आ) संदर्भ समिति की निश्चय संख्या 2 ( I ) (अ) (ख)  
और (ग)

संशोधन निम्न प्रकार किया जावे जो भारतीय  
चिकित्सा केन्द्रीय परिपद को केवल सूचित किया जावे :-  
द्वितीय पत्रम्—व्याकरणे पूर्णांक 100  
लघुसिद्धान्त कौमुदी

अथवा

सारस्वत व्याकरणम्  
व्याकरण विषय के द्वितीय पत्र ज्ञेयांशः  
यथावत

तृतीय पत्रम् पूर्णांक 100

(क) वैद्यकीय सुभाषितानि

पाठ्यग्रन्थ :-

वैद्यकीयसुभाषितानि साहित्यम् अंक 50  
( 1 से 20 अध्याय )

डा० भास्कर गोविन्द धारोकरकृतम्

(ख) अनुवादे अंक 30

अनुवादचंद्रिका (चक्रधर 'हंस')

(ग) अशुद्धि संशोधनंतु साधारणं अंक 20

पुस्तकं सापेक्षं भविष्यति

(इ) संदर्भ समिति की निश्चय संख्या 2 (I) (2)

इसे अस्वीकार किया गया ।

(ई) संदर्भ समिति की निश्चय संख्या 2 (I) (3)

( i ) प्रायोगिक ज्ञेयांश परिपद को सूचित किये जा चुके हैं  
स्वीकृति आवश्यक नहीं है । सैद्धान्तिक ज्ञेयांश  
निसंदेह विस्तृत हैं जिन्हें द्रव्यगुण विज्ञान विषयक  
समिति से संक्षिप्त कराया जावे तथा संक्षिप्त

पाठ्यक्रम भा०चि०के० प० को भेजा जावे और अनुरोध किया जावे कि वे पाठ्यक्रम में तदनुसृत संक्षिप्तिकरण करें अथवा इस पाठ्यक्रम को प्रभावी करने की स्वीकृति दी जावे ।

(ii) मण्डल ने यह भी संस्तुति की कि जीवविज्ञान के जन्तुओं के सामान्य ज्ञानार्थ एक सामान्य जन्तुशाला का निर्माण होना चाहिये इस शाला के स्वरूप का प्राख्य तैयार करने हेतु संयोजक महोदय को अधिकृत किया गया ।

(उ) संदर्भ समिति की निश्चय संख्या 2 (I) (4) :  
आवश्यक सामन्तस्य करने हेतु समिति को पुनः संदर्भित किया जावे ।

(ऊ) संदर्भ समिति की निश्चय संख्या 2(2)अ—I  
दो सैद्धान्तिक प्रश्नपत्र 100-100 अंकों के न होकर केवल 50-50 अंकों के होने चाहिये, शेष स्वीकार्य ।  
तदनुसार R 43—E में निर्दिष्ट विषयवार तालिका में निम्न लिखित संशोधन किया जावे :—

“First Ayurvedacharya (Bachelor of Ayurvedic Medicine and Surgery Examination)

1. Padarth Vigyan	1. Paper 50	100
	2. Paper 50	

(ए) संदर्भ समिति की निश्चय संख्या 2(2) इ—I

इस संस्तुति को महाविद्यालयों के प्राचार्यों को प्रभावीकरण की संभावनाएँ सूचित करने के लिये प्रेषित कर दिया जावे । प्राचार्यों की टिप्पणी मण्डल के विचारार्थ ही प्रस्तुत की जावे ।

(ऐ) संदर्भ समिति की निश्चय संख्या 3(ब) (I)

“स्तात्कोत्तर विभागों के लिये 20-20 रोगी शय्याएँ होनी चाहिये” अंतिम पंक्ति इस प्रकार संशोधित की जावे :—

(ओ) संदर्भ समिति की निश्चय संख्या (4) और (5)

इन्हें अस्यागित किया गया ।

2. शरीर रचना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति  
(परिशिष्ट II)

(अ) संदर्भ समिति की निश्चय संख्या 2 (I) (ख)

अस्वीकार की जावे ।

(आ) संदर्भ समिति की निश्चय संख्या (2) (I) (ग)

समिति द्वारा पुनः विचार किया जावे ।

(इ) संदर्भ समिति की निश्चय संख्या 2(I) (च)

अस्वीकार की जावे ।

3. शरीर क्रिया विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति

(अ) चूंकि इस समिति में मात्र एक सदस्य उपस्थित हुए, अतः बैठक नहीं हुयी । मण्डल ने इस परिस्थिति में संस्तुति की कि उपर्युक्त स्नातकीय परीक्षाओं के लिये 1979 संस्करण पाठ्यक्रमावली में मुद्रित पाठ्यक्रम को ही लागू किया जावे ।

(आ) आयुर्वेद वाचस्पति (एम डी. आयुर्वेद) खण्ड (I) प्रारम्भिक परीक्षा, 1981 तथा खण्ड 2 (उत्तरार्द्ध) परीक्षा, 1983 के लिये भारतीय चिकित्सा केन्द्रीय परीषद् से प्राप्त पाठ्यक्रम को निर्धारित किया जावे । (परिशिष्ट III)

4. द्रव्यगुण विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति (परिशिष्ट IV)

(अ) संदर्भ समिति की निश्चय संख्या 2(क) (II)

अस्वीकार की जावे ।

(आ) संदर्भ समिति की निश्चय संख्या 3 (क)

भारतीय चिकित्सा केन्द्रीय परिषद् द्वारा निर्धारित पाठ्यक्रम स्वीकार किया जावे ।

5. रसशास्त्र, भेषज्यकल्पन विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :  
(परिशिष्ट V)

(अ) संदर्भ समिति की निश्चय संख्या 2 (ख) (III)

अस्वीकार की जावे ।

(आ) संदर्भ समिति की निश्चय संख्या 2 (ग) और (घ) :

नवीन एवं प्राचीन ज्ञेयार्थों में सामञ्जस्य कर पाठ्यक्रम समिति के संयोजक द्वारा सीधे संकाय अध्यक्ष अकादमी परिषद् के समक्ष प्रस्तुत किया जावे ।

6. रोग विज्ञान एवं विकृति विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति : (परिशिष्ट VI)

(अ) संदर्भ नण्डल की संस्तुति संख्या 2 (क) (I)

इस सम्बन्ध में नण्डल की संस्तुति संख्या 6 द्वारा कार्यवाही की जाय ।

(आ) संदर्भ समिति की निश्चय संख्या 2 (ख) (I) :

‘सूचना’ शीर्षक की शब्दावली निरस्त की जावे ।

7. स्वस्त्वृत विषयक आयुर्वेदीय शिक्षण अनुसंधान समिति : (परिशिष्ट VII)

(अ) संदर्भ समिति की निश्चय संख्या 3 (क) और (ख)

संस्तुति अस्वीकार की जावे, व्यवस्था यथावत जारी रहे ।

8. अगदतंत्र विषयक आयुर्वेदीय शिक्षण अनुसंधान समिति : (परिशिष्ट VIII)

(अ) संदर्भ समिति की निश्चय संख्या 2 :

समस्त संस्तुतियों पूर्ण विवरण सहित समिति के संयोजक द्वारा व्यवस्थित कर संकाय के समक्ष प्रस्तुत की जावे ।

9. प्रसूतितंत्र स्त्री, बाल रोग विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति : (परिशिष्ट IX)

(अ) संदर्भ समिति की निश्चय संख्या (5) :

इस पर विचार अत्यन्त किया गया ।

(आ) संदर्भ समिति की निश्चय संख्या (7) :

तदनुसार 0.329 एन-2 में निम्नांकित संशोधन किया जावे :—

Minimum Number of student to be admitted to Ayurvedic College :—

The minimum number of students to be admitted to an Ayurvedic college should be 20 to 60 for time being. 10% seats shall be reserved for female students.

(इ) संदर्भ समिति की निश्चय संख्या 9 (1), (2), (3) :

इन्हें न्यूनतम आवश्यकता तात्तिका में समाविष्ट किया जावे ।

(ई) संदर्भ समिति की निश्चय संख्या 9 (4) :



(1) सम्बद्ध महाविद्यालयों के प्राचार्यों से अनुरोध किया जावे कि वे उपयुक्त व्यवस्था सम्पन्न होने तक आयुर्वेद महाविद्यालयों के समीपवर्ती, मेडीकल या मेटरनीटी हास्पिटल प्रबंधकों से सम्पर्क कर प्रसूतिगृहों आदि में अपने महाविद्यालय के छात्रों को प्रसूति-प्रत्यक्ष-कार्मभ्यास प्रशिक्षण हेतु भेजने की व्यवस्था करें।

(2) समिति की इस संस्तुति को राज्य सरकार के स्वास्थ्य चिकित्सा विभाग को आवश्यक व्यवस्था सम्बन्धी आदेशार्थ भेज दिया जावे।

(उ) संदर्भ समिति की निश्चय संख्या 10

इस पर विचार असंगत किया गया।

10. काय चिकित्सा विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

(परिशिष्ट X)

(अ) संदर्भ समिति की संस्तुति संख्या 2 (7), (8) :

समिति से अनुरोध किया जावे कि वह अपनी संस्तुति के अनुरूप प्रश्नपत्रों का व्यवस्थित विभाजन तथा अपेक्षित पूर्तियां कर मण्डल के विचारार्थ प्रस्तुत करे।

11. शालाक्यतंत्र विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति : (परिशिष्ट XI)

(अ) संदर्भ समिति की निश्चय संख्या 2 (3)

इस सम्बन्ध में मण्डल की निश्चय संख्या 6 के द्वारा कार्यवाही की गई।

12. शालाक्यतंत्र विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति :

(परिशिष्ट XII)

(अ) संदर्भ समिति की निश्चय संख्या 2 (I) :

इसे समिति को पुनर्विचारार्थ भेजा जावे।

6. मण्डल ने अनुभव किया कि आयुर्वेदाचार्य ( वैचलर आफ आयुर्वेदिक मेडीसिन एण्ड सर्जरी) एवं आयुर्वेद वाचस्पति एम.डी. आयुर्वेद परीक्षा से सम्बन्धित नियम, उपनियम, अध्यादेश में परीक्षाओं के व्यवस्थित सम्पादनार्थ कुछ आवश्यक संशोधन अपेक्षित हैं। यद्यपि इन दोनों उपाधियों के नामकरण परिवर्तन सम्बन्धी संशोधन तत्सम्बन्धित अध्यादेश आदि में पूर्वतः किये जा चुके

हैं तथापि भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित मानक के आधार पर अल्प संशोधन अपेक्षित है। चूंकि 1981 संस्करण आयुर्वेद वाचस्पति का पाठ्यक्रम शीघ्र मुद्रित होना है इसके लिये सम्पूर्ण तत्सम्बन्धित अध्यादेशों को अद्यतन रूप में संकलित करना परमावश्यक हो गया है। मण्डल ने उक्त दृष्टिकोण से उन्हें व्यवस्थित कर स्वीकार करने की संस्तुति की। (परिशिष्ट XIII)

7. विश्वविद्यालय की हैण्डबुक के परिनियम 42-एफ : 1, 2, 3 के प्रावधानान्तर्गत 24 अगस्त, 1982 तक की कालावधि के लिये निम्नलिखित आयुर्वेदीय शिक्षण एवं अनुसंधान समितियों पर आन्तरिक सदस्यों के एक रिक्त स्थान पर निम्नांकित व्यक्तियों की नियुक्ति की :—

(iii) शरीर क्रिया विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

वैद्य गिरीश चन्द्र उप्रेती,  
शरीर क्रिया विभागाध्यक्ष,  
श्री परशुरामपुरिया आयुर्वेद महाविद्यालय,  
सीकर।

(X) प्रसूतितन्त्र, स्त्री बाल रोग, विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति :

वैद्य गिरीश चन्द्र उप्रेती,  
प्रसूतितन्त्र विभागाध्यक्ष,  
श्री परशुरामपुरिया आयुर्वेद महाविद्यालय,  
सीकर।

8. मण्डल की दिनांक 23 एवं 24 अगस्त, 1979 की निश्चय संख्या 6 के संदर्भ में श्री मदन लाल शर्मा, (संयोजक, आयुर्वेद अध्ययन मण्डल तथा अधिष्ठाता, आयुर्वेद संकाय) द्वारा प्रस्तुत विश्वविद्यालय से सम्पादित गृह-विज्ञान उपाधि पाठ्यक्रम में आयुर्वेद विषयक प्रश्नपत्रों के निर्धारणार्थ प्रश्नपत्रों (परिशिष्ट XIV) को स्वीकार करते हुए संस्तुति की कि यह मुद्दा गृह विज्ञान पाठ्यक्रम समिति के विचारार्थ भेज दिया जावे।

9. मण्डल ने वैद्य राम प्रताप मिश्र, राष्ट्रीय आयुर्वेद संस्थान जयपुर के पत्र दिनांक 12 अप्रैल 79 द्वारा अध्यापकों की वर्तमान योग्यता भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित मानक के अनुरूप करने के अनुरोध पर विचार कर संस्तुति की कि इस विषय पर आयुर्वेद संकाय की निश्चय संख्या 6

दिनांक 23 एवं 24 जुलाई, 79 द्वारा गठित समिति पूर्वतः विचार कर रही है।

मण्डल के सदस्यों द्वारा मण्डल के कुल संचालन के लिये श्री नदन लाल शर्मा संयोजक सहोदय तथा कार्य सम्पादन में सहयोगार्थ विद्दविद्यालय कार्यालय की ओर से उपस्थित श्री रवीन्द्र भारती, संकाय प्रभारी को बन्धुवाद के रूप में साथ बैठक विस्तारित हुई।

संयोजक

हृ०

वैद्य नदन लाल शर्मा

## परिशिष्ट I

(संदर्भ मण्डल की संस्तुति संख्या 51)

राजस्थान विश्वविद्यालय, जयपुर

आयुर्वेदीय मौलिक सिद्धांत, संहिता, संस्कृत, विज्ञान एवं इतिहास विषयक शिक्षण तथा अनुसंधान समिति की दिनांक 25 अक्टूबर, 1979 को कुलपति सचिवालय विश्वविद्यालय भवन, जयपुर में आयोजित बैठक का कार्यवाही विवरण :—

## उपस्थित

1. श्री वैद्य प्रभु दत्त शर्मा,
2. श्री वैद्य शंकर लाल त्रिवेदी,
3. श्री वैद्य घनश्याम शास्त्री (संयोजक)

1. राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनिष्पन्न 42 एफ(4) के प्रावधानान्तर्गत मौलिक सिद्धांत, संहिता, संस्कृत, इतिहास विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति के संयोजक पद पर वैद्य घनश्याम शास्त्री, प्रोफेसर, राजकीय आयुर्वेद कालेज, उदयपुर, सदस्य आयुर्वेद अध्ययन मण्डल को तीन वर्ष की कालावधि के लिये सर्वसम्मति से नियुक्त किया गया।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित परीक्षाओं में निर्दिष्ट मौलिक सिद्धांत, संहिता, संस्कृत, पदार्थ विज्ञान, उद्भिज्जांग प्रत्यंग विज्ञान, रसशास्त्र परिचय, आयुर्वेद इतिहास और आयुर्वेद परिचय अनुसंधान पद्धति और सांख्यिकी, मनोविज्ञान, मानसरोग, निदान एवं चिकित्सा आदि विषयों के पाठ्यक्रम तथा पाठ्यपुस्तकों, पाठ्ययोजना एवं परीक्षा योजना को निर्वाचित करने के सम्बन्ध में अध्ययन मण्डल के विचारार्थ क्रमशः संस्तुति प्रस्तुत की जाती है।

(1) प्री-आयुर्वेद (प्राग आयुर्वेद) परीक्षा 1982

विषय—1. संस्कृत

(अ) प्रथम पत्र—

(क) पद्य साहित्य,

(ख) गद्य साहित्य में लिखित पाठ्यपुस्तकों के संस्करण, टीका, टिप्पणी और प्राप्तिस्थान, सहित अंकित किये जावें। इस

विषय में भारतीय चिकित्सा को केन्द्रीय परिषद् से स्पष्ट ज्ञात किया जावे।

द्वितीय पत्र—

- (क) व्याकरण ज्ञान के जेयांश भारतीय चिकित्सा की केन्द्रीय परिषद् के पाठ्यक्रम में अंकित नहीं है सम्पूर्ण पाठ्यक्रम परिषद् द्वारा यथावत निर्धारित ही संचालित करने का निर्देश है, तदनुसार उक्त अंश भी परिषद् को भेजकर अनुमोदित और स्वीकृत कराना आवश्यक है।
- (ख) व्याकरण ज्ञान के लिये लघु सिद्धांत कांमुदी के पूर्व निर्धारित जेयांशों का अव्ययन होना चाहिये इसमें से अनुवाद और अशुद्धि संशोधन का अंश तृतीय पत्र में जोड़ा जाना चाहिये। व्याकरण का पत्र पूर्णोंक 100 का होना चाहिये।
- (ग) “तृतीय पत्र” में “वैद्यकीय सुभाषित साहित्यम्” ग्रन्थ के 10 अध्याय पूर्णोंक 50 के होने चाहिये शेष 50 अंकों में अनुवाद के अंक 30 और अशुद्धि संशोधन के अंक 20 पूर्ववत् किन्तु तृतीय पत्र में निर्धारित होने चाहिये। इस पर भी कौंसिल की स्वीकृति ली जावे।

## 2. प्रारम्भिक पदार्थ विज्ञान

इस विषय के जेयांशों को देखते हुये दो प्रश्न पत्र आवश्यक नहीं है, केवल एक प्रश्न पत्र पूर्णोंक 100 का रखा जा सकता है, तथा मौखिक 50 अंक का रहेगा।

## 3. उद्भिज्जर्ग प्रत्यांग विज्ञान

इस विषय के प्रायोगिक जेयांश भी परिषद् को भेजकर स्वीकृत करवाना आवश्यक है। क्योंकि यह अंश परिषद् के पाठ्यक्रम में अंकित नहीं है। सैद्धांतिक जेयांश अति विस्तृत है और प्रि-आयुर्वेद के स्तर से अधिक उच्च स्तर का है। यह संक्षिप्त होना चाहिये। इस विषय में द्रव्य गुण विज्ञान विषय की समिति में विचार किया जाकर आवश्यक जेयांश ही निर्धारित कराये जावे। जो केवल 50 पूर्णोंक के हों शेष 50 पूर्णोंक का प्रारम्भिक जन्तु विज्ञान विषय का जेयांश सन् 1977 के पाठ्यक्रम के जेयांशों के अनुसार निर्धारित वनस्पति एवं जन्तुशास्त्र के अनुसार होना चाहिए।

#### 4 प्रारम्भिक रसशास्त्र परिचय

इस विषय का सम्बन्ध रसशास्त्र विषय की समिति से विशेष है।  
अतः उसमें विचार किया जाकर आवश्यक जेयांग निर्धारित कराये जावें।

इस समिति के विचार में इस प्रश्न पत्र में आवृत्तिक प्रारम्भिक भौतिक और रसायन शास्त्र के जेयांगों को सैद्धान्तिक एवं प्रायोगिक के रूप में सन् 1977 के पाठ्यक्रम के अनुसार निर्धारित किये जावें।

इस विषय के निर्धारित जेयांगों को भी भा० चि० के० प० से स्वीकृत कराये जावे।

#### 5. आयुर्वेद इतिहास एवं आयुर्वेद परिचय :

इस विषय के लिये निम्नित रूप से पाठ्यपुस्तक ही निर्धारित होनी चाहिये। आलोच्य ग्रन्थों से अध्ययन करना श्री आयुर्वेद स्तर के छात्रों को कठिन प्रतीत होता है।

2. आयुर्वेदाचार्य (चैतलर आरु आयुर्वेदिक मैडिसिन एण्ड सर्जरी)  
परीक्षा :

(अ) प्रथम वर्ष परीक्षा 1982 :

विषय 1. पदार्थ विज्ञानम्

इस विषय के जेयांगों के विस्तार को देखते हुये दो सैद्धान्तिक प्रश्नपत्र पूर्णिक 100-100 के होने चाहिये। प्रथम प्रश्नपत्र जेयांग 1 से 101 तक का होगा। द्वितीय प्रश्नपत्र जेयांग 102 से 179 तक होगा। प्रायोगिक मौखिक बयावत् 50 पूर्णिक का होगा।

2. अष्टांग संग्रह (सूत्र स्थान)

अखिल भारतीय स्तर पर अष्टांग हृदय ग्रंथ की उपलब्धि एवं प्रचार विशेष होने से उसी का सूत्र स्थान पर निर्धारित करना युक्ति युक्त होगा अष्टांग संग्रह पुस्तक दुर्लभ हो रही है।

(ब) द्वितीय वर्ष परीक्षा 1983 इस समिति से सम्बद्ध विषय

(स) तृतीय वर्ष परीक्षा 1984 इनमें निर्धारित नहीं है।

(द) चतुर्थ वर्ष परीक्षा 1985

। चरक संहिता पूर्वाह्न (सूत्र स्थान से इन्द्रिय स्थान पर्याप्त है)।

(इ) पंचम वर्ष परीक्षा 1986

1. चरक संहिता उत्तरार्द्ध (चिकित्सा से सिद्धि, स्यान्तक) अष्टांग संग्रह (सूत्र) और चरक संहिता ग्रन्थों को अक्षरशः पढ़ाया जाना आवश्यक है। इनमें 100 लेक्चरस में अध्यापन पूर्ण नहीं हो सकता है। अतः न्यूनतम प्रत्येक प्रश्नपत्र में 2. अन्तर प्रतिदिन अध्ययापन होना आवश्यक है, अथवा 300 व्याख्यान प्रति प्रश्नपत्र में होना अति अपेक्षित है।

### 3. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) परीक्षा :

भारतीय चिकित्सा केन्द्रीय परिपद द्वारा निर्धारित आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद.....) के भाग--1) प्रारम्भिक परीक्षा तथा भाग--2 उत्तरार्द्ध परीक्षा के पाठ्यक्रम (परिशिष्ट 1) को उपयुक्त परीक्षा के लिये निम्नलिखित अभियुक्तियों के साथ स्वीकार किया।

#### (अ) खण्ड 1 (प्रारम्भिक पूर्वार्द्ध परीक्षा), 1981

विषय 1 मेथड्स आफ रिसर्च एण्ड मेडिकल स्टैटिस्टिक्स, तथा आयुर्वेद इतिहास। इस विषय का नामकरण संस्कृत में "आयुर्वेदितिहास, अनुसंधान पद्धति: सांख्यिकी च" होना चाहिये। इसका सम्पूर्ण ज्ञेयांश संस्कृत भाषा में ही अंकित होना चाहिये परिपद द्वारा प्रेषित इस पाठ्यक्रम के अंग्रेजी भाग का प्रामाणिक अनुवाद कराके प्रसारित करने हेतु सेन्ट्रल कौंसिल आफ इण्डियन मेडिसिन, नई दिल्ली को निवेदन किया जाना चाहिये।

#### ब—खण्ड 2 (उत्तरार्द्ध मुख्य परीक्षा) 1983

विषय अथवा स्पेसिलिटी—

##### (1) संहिता ग्रन्थ—

इस विषय की मौखिक परीक्षा तथा महानिवन्ध परीक्षा के साथ-साथ (Clinical) आतुरालयीय परीक्षा भी होनी चाहिये। तदर्थ शय्याएँ भी निर्धारित होनी चाहिये।

##### (2) आयुर्वेद सिद्धांत दर्शन :

इस विषय की मौखिक परीक्षा तथा महानिवन्ध परीक्षा के साथ साथ (Clinical) आतुरालयीय परीक्षा भी होनी चाहिये। तदर्थ 20 बीस शय्याएँ अवश्य निश्चित होनी चाहिये।

##### (3) मनोविज्ञान एवं मानस रोग :

इस विषय के चार प्रश्न पत्रों के नाम और जेंवांग सेंट्रल कौंसिल द्वारा निर्धारित नहीं हैं। समिति को सम्पत्ति में वे निम्न प्रकार से निर्धारित किये जाने चाहिये, ताकि इस विषय में स्नातकोत्तर विशेषज्ञ चिकित्सक मौलिक सिद्धान्त विभाग के तत्त्वावधान में निष्ठा होकर कार्यरत हो सकें। जिसकी वर्तमान समय में अत्यन्त आवश्यकता है।

प्रश्न पत्र :—

1. मनोविज्ञान के आधारभूत सिद्धान्तों का प्राचीन दर्शन और पदार्थ विज्ञान के आधार पर अध्ययन।
2. आधुनिक मनोविज्ञान,
3. मानस रोग निदान पद्धति.
4. मानस रोग चिकित्सा,
5. प्रायोगिक (आधुनिक) तथा मौखिक एवं महानिबन्ध।

(4) स्नातकोत्तर डिप्लोमा (एक वर्षीय) पाठ्यक्रम,

यह सेंट्रल कौंसिल आफ इण्डियन मेडिसिन द्वारा प्रेषित पाठ्यक्रम है।

इसमें इस समिति सम्बन्धित निम्नांकित विशेषज्ञता के लिये विषय निर्धारित है।

1. मानसरोग चिकित्सा निष्ठा।

इस विषय में पूर्वोक्त स्नातकोत्तर के समान ही चार प्रश्नपत्र और एक प्रायोगिक मौखिक परीक्षा होगी। महानिबन्ध निर्धारित नहीं होगा। यह भी स्नातकोत्तर के साथ ही मौलिक सिद्धान्त विभाग के तत्त्वावधान में संचालित होना आवश्यक है।

5. आयुर्वेद विद्यावारिधि (Ph.D. in Ayu.) :

यद्यपि इसका सम्बन्ध सीवा रिसर्च बोर्ड से है, तथापि इस और ध्यान आकृष्ट करना आवश्यक है कि रिसर्च बोर्ड में आयुर्वेद के निम्नांकित विषयों से सम्बन्धित अनुसंधान के महानिबन्धों को और उनकी विषयानुक्रमिकाओं को इस समिति के विचारार्थ शोध प्रबन्धों के रूप में अनुमोदन के लिये प्रेषित किये जावें।

विषय :

1. आयुर्वेदीय संहिता ग्रन्थ तथा अन्य साहित्य विषयक अनुसंधान।
  2. आयुर्वेदीय मौलिक सिद्धान्त, पदार्थ विज्ञान और दर्शनों सहित।
  3. आयुर्वेद से सम्बन्धित विषयों के इतिहास का अन्वेषण।
  4. मनोविज्ञान, मानसरोग और मानस चिकित्सा।
- सबन्धवाद कार्यवाही सम्पन्न की गयी।

ह०/-

(वैद्य धनश्याम शास्त्री)  
संयोजक



5. Application of statistical methods of Ayurvedic research, collection, compilation and tabulation of medical statistics, methods of presentation of data, calculation of mean, median and mode, measures of variability, standard deviation, standard error, normal probability curve.
6. Concept of regression and correlation and their interpretation.
7. Tests of significance  $t$ ,  $x^2$  and  $F$  test and their simple applications.
8. Principle of medical experimentation on variation in experimental design.
9. Vital statistics.

**Alocha Granth.**

1. Apurvediya Anusandhan Paddhati—Acharya P.V. Sharma.

आयुर्वेद वाचस्पति ( एम.डी. आयुर्वेद आयुर्वेदीय सिद्धान्ताः दर्शन च )

परीक्षा 1983

प्रथम पत्रम् पदार्थ विज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50  
पदपदार्थनिरूपणम्, प्रमाणानि, सृष्टिक्रम, धातुभेदन पुरुषविचारः,  
तत्त्वप्रतिपादनं, प्रकृतिविचारः, वादमार्गः ।

द्वितीय पत्रम् आधार भूतदर्शनम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50  
आयुर्वेदशास्त्रे सन्निविष्टानां दार्शनिकसिद्धान्तानां ज्ञानम् आयुर्वेददर्शन-  
रूप वैशिष्ट्यम्, कार्यकारणभावः, अनुसन्धानकर्माण्ये च तस्य महत्त्वम्, लोक-  
पुरुषयोः साम्यम् ।

तृतीय पत्रम् मनोविज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50  
मनोनिरूपणं, मनसो गुण-दोष-कर्मविषयाणां विवेचनम्, मनसः पोषणम्,  
शरीरमनसोरन्योन्याश्रयत्वम्, कर्मपुरुषस्य मनोवैहिकत्वम्, मनोविकाराः मनोदेहिक-  
विकाराश्च, नव्यमनोविज्ञानस्य मनोविकारविज्ञानस्य च परिचयः, योगः,  
यमनियमोदीनों परिचयः ।

चतुर्थ पत्रम् आधार भूतसिद्धान्ताः होरात्रयम् पूर्णांका 100

न्यूनतमोत्तीर्णांका 50

आयुर्वेदस्याधारभूत सिद्धान्तानां ज्ञानम्, विशेषतः/पञ्चभूतत्रिदोष-  
सिद्धान्तयोः सविशेषविवेचनात्मकमध्ययनम् । नव्यालोके भूतपञ्चेकस्य दोषत्रयस्य च

स्वरूपनिर्धारणयो, मिस्वं वैज्ञानिकत्वप्रतिपादनं च । इतरचिकित्साशस्त्रीय सिद्धान्तानां परिचयस्तुलनात्मकः ।

आलोच्यप्रथा :

1. चरकसुश्रुतसंहितयोः संवद्धोशाः
2. साहित्यकारिका तत्त्वकौमुदी संहिता
3. वैशेषिकदर्शनं प्रशास्तपादभाष्यसहितम्
4. पाञ्चतन्त्रयोगदर्श व्यासनंभाष्यसहितम्
5. न्यायदर्शनं वात्स्यायनभाष्यसहितम्
6. वेदान्तसारः
7. मानमेयोदयः
8. भारतीय दर्शनस्वलदेव उपाध्याय
9. Indian Philosophy (Vol. I-II)—Radha Krishnan
10. History of Indian Philosophy (Vol. I-IV)—S. N. Das Gupta.
11. मानसरोग विज्ञान — डा० बालकृष्ण अमरजी पाठक
12. दीपकराजत्वमीमांसा — आचार्य प्रियव्रत शर्मा

आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद संहिता) परीक्षा, 1983

प्रथम पत्रम् चरकसंहिता होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

चरकसंहिताया आधोपान्तं सविशेषं शास्त्रीयं दार्शनिकमतिहासिक च विवेचनात्मकमध्ययनम्, आयुर्वेददीपिकाजल्पकल्पतस्याख्या विमर्शसहितम् ।

द्वितीय पत्रम् सुश्रुतसंहिता होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

उपरिनिर्दिष्टविधिना सुश्रुतसंहितायाः इल्लहण-चक्रपाणि-कृत-याख्या विमर्शसहितं सविशेषमध्ययनम् ।

तृतीय पत्रम् अष्टांगसंग्रहः होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

वाग्भटकृताष्टांगसंग्रहस्येन्दुविरचितशंशिलेखा व्याख्याविमर्शसहितं सविशेषमध्ययनम् । अष्टांगहृदयेन सह तुलनात्मकंचाध्ययनम् ।

चतुर्थ पत्रम् आयुर्वेदेतिहासः होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

आयुर्वेदावतरणात् प्रारब्धेदानी यावदायुर्वेदस्य समोन्नेतिवृत्तांप्यवं परिज्ञानम् । विभिन्नकालेषु विविधघटनाक्रमाणां, ग्रन्थानां ग्रन्थकर्तृण समीचीनं

ज्ञानं कालनिर्णयादिविमर्शसहितम् । आयुर्वेदांगानां विकासक्रमात्मकमध्ययनम्,  
आयुर्वेदीयशिक्षणनुसन्धान—राजमान्यता—सार्वभौमप्रभावादीनां ज्ञानम् ।

आलोच्य ग्रन्था :

चरकसंहिता आयुर्वेददीपिकाजल्पकल्पतरूव्याख्याक्षयां संहिता ।

सुश्रुतसंहिता, निबन्धसंग्रहभानुमतीटीकाम्यां संहिता ।

अष्टांगसंग्रहः. शशिलेखा व्याख्यासंहिताः ।

अष्टांगहृदयम् सर्वणसुन्दरा व्याख्यासहितम् ।

आयुर्वेद का वैज्ञानिक इतिहास—आचार्य प्रियव्रत शर्मा ।

चरक चिन्तन—आचार्य प्रियव्रत शर्मा ।

वाग्भट विवेचन—आचार्य प्रियव्रत शर्मा ।

अथर्ववेदीय कर्मज व्याधि निरोध — पं. केशवदेव शास्त्री ।

## परिशिष्ट I

आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद शरीर रचना) परीक्षा खण्ड (I)

प्रारम्भिक परीक्षा, 1981

द्वितीय पत्रम् होरात्रयम् पूर्णाङ्क 100 न्यूनतमोत्तीर्णाङ्क 50

शारीरम्—व्यवहारिक शरीर रचनाशरीरक्रिययोः प्रमुखसिद्धान्तानां विधीनां चाध्ययनम् । प्रकृतिविकृति दृष्ट्या निम्नभावनां विशेषाध्ययनम्—

सिराधमनी—विचारः—स्नायुनाडीकण्डराविचारसहितः ।

स्त्रोतोविचारः—चरकमुश्रूतयोदृष्टिकोणसहितः ।

मर्मविचारः—प्रत्येकमर्मणः स्थानरचना क्रिया स्वतन्त्रमहत्वपूर्वकं विस्तरेण विचारः

अग्निविचारः—अग्निसम्बन्धितविचारस्यायुर्वेदीयमौलिकदृष्टिकोणप्रतिपादनम् ।

कायचिकित्साविषये विचारस्यस्योपादेयता साम्ये पांमविस्तार विवेचनम् ।

कोष्ठकोष्ठांगविचारः—महास्त्रोत सः वर्णनम्, कोष्ठ विवेचनम् हृदयक्लोमफुफ्फुसयकृतप्लीहोण्डुकवृक्कनाभिदिम्बान्त्रवस्तिप्रीतिकोष्ठांगानां क्रिया-वैशिष्ट्यं पृष्ट्या विचारः । अन्यसम्बन्धितानामवयवसव्यानौज्जनान्द्रियमनः बुद्धि-त्यादिभावनामपिक्रिया वैशिष्ट्यदृष्ट्या विचारः ।

रचनाशरीरस्य श्वच्छेदावारितं ज्ञानम् ।

× × ×

खण्ड (2) उत्तरार्द्ध परीक्षा, 1983

प्रथम पत्रम् गर्भशरीरम्—होरात्रयम् पूर्णाङ्क 100 न्यूनतमोत्तीर्णाङ्क 50

अभिनिवृत्तिशरीरम् गर्भावक्रान्तिः, गर्भशरीरम्, गर्भस्य मातृजदिपइ-भावाः, गर्भपोषणवृद्धि क्रम, शुक्रशैलितयोः स्वरूपम् तयो, बीज-बीजभागबीज-भागावयनादीनां प्रावृतवैकृतावस्ययोः परिज्ञानम्, ऋतुमती सहयोग हीतगर्भासन्न, प्रसवाधनस्यामूत्पन्नानि लक्षणानि, आनुवंशिकी सिद्धान्तः ।

द्वितीय पत्रम् सन्ध्यस्तिमर्मशरीरम्—होरात्रयम्

पूर्णाङ्क 100

न्यूनतमोत्तीर्णाङ्क 50

सन्धिरचनाशारीरम्, संघिसंख्याप्रकाशश्च । अस्थिरचनाशारीरं, मतमे-  
पुरस्सरमस्त्यगणना, अस्युत्कृतिः । मर्मविज्ञानीयं, तन्मौलिकत्वप्रतिपादनं,  
रचनाशारीरे शल्यतन्त्रे च तस्य महत्वं मर्मसंख्याप्रकारविमर्शः, त्रिमर्मीयविवेचनं  
च ।

तृतीय पत्रम् कोष्ठांगशारीरम् होरात्रयम् पूर्णाङ्का 100 न्यूनतमोत्तीर्णाङ्का 50

कोष्ठस्त्व महान्रोत सहृदय फुफ्फुसनाभिवलोमयकृतप्लीहामाशयाण्डु  
कवृक्कवस्तिगर्भगयान्त्रामाशयाहिकोष्ठांगानां रचनाशारीर दृष्ट्या समीचीन ज्ञानम्,  
प्राणोजः मनः रसादीनां हृदमन सह सम्बन्धः । त्वक्कलयोः स्वरूपं, द्वादशप्राणाः  
दशप्राणायतनानि, चेतनास्थानविवेकः ।

चतुर्थ पत्रम् सिरावमनीश्रोतः शारीरम् होरायम् पूर्णाङ्का 100  
न्यूनतमोत्तीर्णाङ्का 50

सिरावमनीश्रोतसां पार्थक्यम् । हृत्प्रभवाः सिरावमन्यः चत्वारिंशत्  
सिराः, सिराणां सर्ववहत्वप्रतिपादनं च दश महायशूलाः वमन्यः, चतुर्विंशति  
वमन्यः श्रोता शरीरं, श्रोतसो रचनासंख्याप्रकारविमर्शः, श्रोतोमयं हि शरीरं, प्राञ्च  
प्रतिचमतानुसारेण सिरावमनीश्रोतसो विशद ज्ञानम् ।

पञ्चकनिरूपणं बाह्यचक्रप्रतिपादनं, इडा-पिंगला-सुषुम्णानाडीनां वर्णनं,  
वातानाडीतन्त्रं, मस्तिष्कसौद्रुग्निकतन्त्रयोः परिबोधः ।

उपर्युक्तसम्पूर्णविषयाणां अभिनवदृष्ट्या तुलनात्मकं विवेचनात्मकं वा  
अव्ययनम् ।

आलोच्य ग्रन्था :—

1. अभिनवं शारीरम् — दामोदरशर्मणौङ्कृतम्
2. पारिप्लवं शब्दार्थशारीरम् — दामोदरशर्मणौङ्कृतम्
3. बृहच्छारीरम् — वारिसर
4. Gray's Anatomy
5. Embryology-Barth

## परिशिष्ट II

(संदर्भ मण्डल की संस्तुति संख्या 5(2))

दिनांक 25 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण, जयपुर में आयोजित शरीर रचना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थित :

1. वैद्य अमर नाथ शर्मा, (संयोजक)
2. वैद्य राम प्रसाद मिश्र,
3. वैद्य श्री निवास चतुर्वेदी,
4. वैद्य हरि प्रसाद शर्मा,
5. डा० जगन्नाथ व्यास,

1. राजस्थान विश्वविद्यालय हैण्डबुक पार्ट 2 के परिनियम 42 एफ (4) (1) के प्रवाधानान्तर्गत आयुर्वेद शिक्षण एवं अनुसंधान समिति के संयोजनार्थ श्री अमर नाथ शर्मा, सदस्य आयुर्वेद अध्ययन मण्डल, शरीर रचना विभागाध्यक्ष, म० मो० मा० राजकीय आयुर्वेद महाविद्यालय, उदयपुर को 3 वर्ष की कालावधि के लिए संयोजक स्वीकार किया है।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित परीक्षाओं में निर्दिष्ट शरीर रचना विज्ञान विषय के पाठ्यक्रम तथा पाठ्यपुस्तकें, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल को निम्नलिखित संस्तुतियां की गईं :—

(I) द्वितीय वर्ष आयुर्वेदाचार्य (बैचलर आफ आयुर्वेद मेडिसिन एण्ड सर्जरी) परीक्षा 1983 :

समिति ने भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित एवं आयुर्वेद अध्ययन मण्डल व आयुर्वेद संकाय द्वारा गठित समिति से अनुमोदित शरीर रचना विज्ञान विषय के पाठ्यक्रम को निम्नलिखित अभ्युक्तियों के साथ स्वीकार करने की संस्तुति की। यह अभ्युक्तियां अध्ययन-अध्यापन की व्यवहारिक सुविधा के दृष्टि कोण से अत्यन्त आवश्यक है :—

(क) भारत सरकार द्वारा प्रकाशित आयुर्वेद शिक्षण शब्दावली के शब्द संस्कृत शब्द के साथ अनिवार्यतः समाविष्ट किये जावें ताकि पर्याय सम्बन्धी भ्रम न रहे।

(ख) प्रथम पत्रम् ज्ञेयांश (4) संख्या शारीरम् में आधुनिक नवीनकरण का भी संशोधन किया जाना चाहिए ।

(ग) प्रथम पत्र के ज्ञेयांश (5) प्रमाणशारीरम् में आधुनिक नवीनकरण का भी समावेश किया जाना उचित होगा ।

(घ) प्रथम पत्र के ज्ञेयांश (6) अस्थि शरीरम् के पश्चात् कोष्ठक में निम्न-लिखित शब्दावली प्रतिस्थापित की जावे :—

“शरीरस्य सम्पूर्ण अस्थिनाम सामान्य विवरणम् तेषाम्”

(च) प्रथम पत्र के ज्ञेयांश (7) में सन्धि शारीरम् में मांस पेशीभिः सम्बन्धः शब्द के पश्चात् “सम्पूर्ण सन्धिविवरणम्” और जोड़ा जावे तथा प्रमुख सन्धिनाम् के स्थान पर सम्पूर्ण सन्धिनामः शब्द को समाविष्ट किया जावे ।

(छ) द्वितीय पत्र के ज्ञेयांश (4) के उत्तमांगीपशारीरम् की अन्तिम पंक्ति आज्ञाचक्रम् के स्थान पर आज्ञाकन्दम् शब्द लिखा जाना चाहिये ।

(ज) आलोच्य ग्रन्थ की शब्दावली के अन्तर्गत नवें क्रम में पुस्तक आयुर्वेद शरीर रचना विज्ञान : तारा चन्द शर्मा, का समावेश किया जावे ।

(झ) प्रात्यक्षिकाः विषय के पश्चात् प्रायोगिक परीक्षा निम्न रूप में निर्धारित की जानी चाहिये ।

(i) अभिज्ञानम् (Spotting) 20 अंक

(ii) मौखिक

(अ) अस्थि 40 अंक

(ब) कोमल (Soft parts)

(क) अंग 40 अंक

(ख) व्यवच्छेदित 40 अंक

(स) पंजिका प्रायोगिक 20 अंक

(द) क्ष किरण पत्रक पाठन 20 अंक

(इ) तल रचना 20 अंक

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200 अंक

आयुर्वेदाचार्य, द्वितीय वर्ष परीक्षा 1980, 1981 एवं 1982 के शरीर रचना विषयक पाठ्यक्रम के प्रायोगिक के लिये निर्धारित उपर्युक्त

परीक्षा योजना को कुलपति महोदय की विशेष स्वीकृति लेकर तत्काल अधिसूचित किया जावे जिसके की परीक्षा सम्पादन में सुलभता से हो सके ।

भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित आयुर्वेद वाचस्पति एम. डी. आयुर्वेद ( शरीर रचना परीक्षा के पाठ्यक्रम (परिशिष्ट 1) को निम्नलिखित खण्ड (1) प्रारम्भिक परीक्षा तथा भाग (2) उत्तरार्द्ध परीक्षा के लिये निम्ननिर्दिष्ट अभ्युक्तियों के साथ स्वीकार करते की संस्तुति की -

(II) आयुर्वेद वाचस्पति एम.डी. आयुर्वेद परीक्षा खण्ड (1) (प्रारम्भिक) परीक्षा, 1981 :

(क) सैद्धान्तिक प्रश्न पत्र के ज्ञेयांशों को यथावत स्वीकार किया गया । परीक्षा योजना इस प्रकार रहेगी :—

	पूर्णांक	न्यूनतम उत्तीर्णांक
सैद्धान्तिक प्रश्नपत्र	100	50
प्रायोगिक परीक्षा	100	50

(व) 0.329 एन 23 के क्रमांक 2 में शरीर शब्द के पश्चात् कोष्ठक एवं उसमें अंकित शब्द विलोपित किये जायें ।

आर०, 43एफ में पार्ट 1 के क्रमांक 2 में शरीर के पश्चात् कोष्ठक एवं उसमें अंकित शब्द एवं उसके बाद में लिखित शब्द विलोपित किये जायें ।

(स) सैद्धान्तिक प्रश्नपत्र दो खण्डों में विभक्त होगा क, ख ।

अन्त में सभी सदस्य महानुभावों को धन्यवाद समर्पित करते हुये कार्यवाही समाप्त की गई ।

ह०/-

वेद्य अमर नाथ शर्मा  
संयोजक



## परिशिष्ट III

( संदर्भ मण्डल की निश्चय संख्या 5 (3 आ) )

आयुर्वेद वाचस्पति एम०डी० आयुर्वेद क्रिया शारीरम् खण्ड-2-उत्तरार्द्ध  
परीक्षा, 1983.

प्रथम पत्रम् दोषधातुमलविज्ञानम् होरात्रयम् पूर्णाङ्का 100 न्यूनतमोत्तीर्णाङ्का 50

दोषधातुमलानां परिज्ञानम्, एषां स्वरूप-गुण-कर्म-प्रकारधातुत्वपांच-भौतिकत्वनिरूपणम् । अग्निविवेकः, स्रोतोविवेकः, धातुपाकक्रमः, धतुपाके तत्पोषो चाग्निस्रोतस्रोः महत्त्वम्, रससंवहनम् । मलानां मूत्रपुरीमस्वेदादीनां निर्माण-कर्म उत्सर्गविवेचनम् । ओजोनिरूपणम् ।

नव्यमतेन विविधजीवभौतिक-जीवरासायनिक-सिद्धान्तानां क्रियाशारीरो पयोगिक व्यावहारिकज्ञानम् ।

द्वितीय पत्रम् प्रकृतिसंयत्तारादिविज्ञानम् होरात्रयम् पूर्णाङ्का 100  
न्यूनतमोत्तीर्णाङ्का 50

प्रकृतिज्ञानस्य महत्त्वम्, प्रकृतिस्वरूपं तदभेदाश्च, प्राच्यनव्यमतयोः प्रकृतिविनिश्चयविधिः । सत्व-सार-संहनन-प्रमाण-सात्य-आहारशक्तिव्यायामशक्ति-वय-इत्येतेषां भावानां भेदपुरः सरं सोपादेयताविमर्शपरिज्ञानम् । प्रमाणविनिश्चयस्य नव्यविधीनां परिचयः ।

तृतीय पत्रम् कोष्ठांगक्रियाशारीरम् होरात्रयम् पूर्णाङ्का 100  
न्यूनतमोत्तीर्णाङ्का 50

कोष्ठांगानां हृदय-कुम्भ-कुम्भ-यकृत-प्लीहावयवानां क्रियाविवेचनं प्राच्य-नव्यमतसमन्वयपुरः सरम् । अन्यातःसाविग्रन्थीनां अंगरस्ता स्तेषां शारीरवयवेषु प्रभावाः महास्रोतोविवेचनम् पांचभौतिकाहारपचनम्, अवस्थापाकाः, आहार परिणामकराः भावाः ।

चतुर्थ पत्रम् प्रायोगिक क्रियाशारीरम् होरात्रयम् पूर्णाङ्का 100  
न्यूनतमोत्तीर्णाङ्का 50

शारीरभावानां दोष-धातु-उपधातु-मलादीनां प्रयोगशालीय परीक्षणविधि ज्ञानम् । मांसपेशी-नाडी-हृदयादिकर्मणां प्रायोगिकं परीक्षाम् ।

आलोच्य ग्रन्था :—

1. चरकसुश्रुतवाग्भटादीनामुपयोगिनींशः ।
2. आयुर्वेदीय क्रियाशारीर—रणजीतराय ।
3. Introduction to Kayachikitsa—C. Dwarakanath

4. Digestion and Metabolism —do—
5. Physiological Basis of Medical Practice—Best & Taylor.
6. Applied Physiology—Samson Wight
7. Text Book of Physiology and Biochemistry—Bell Davidson and Starborough.
8. Text books of Endocrinology—Williams.

## परिशिष्ट IV

(संदर्भ मण्डल की संस्तुति संख्या 5 (4))

राजस्थान विश्वविद्यालय, जयपुर

दिनांक 25 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय, विश्वविद्यालय प्रांगण, जयपुर में आयोजित द्रव्यगुण विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :—

उपस्थित :

1. वैद्य हनुमत्सहाय शर्मा (संयोजक)
2. वैद्य राम सुधील सिंह,
3. वैद्य राम प्रसाद शर्मा,
4. श्री ईश्वर दास स्वामी,
5. वैद्य मदन गोपाल गौड़ (विशेष आमन्त्रित)

1. राजस्थान विश्वविद्यालय हैण्डबुक भाग 2 के परिनियम 42एफ 4(I) प्रावधानान्तर्गत द्रव्यगुण विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजनार्थ वैद्य हनुमत्सहाय शर्मा, सदस्य आयुर्वेद अध्ययन मण्डल द्रव्यगुण विज्ञान विभागाध्यक्ष, म. मो. मा. राजकीय आयुर्वेद महाविद्यालय, उदयपुर को 3 वर्ष की कलावधि के लिए संयोजक नियुक्त किया।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित परीक्षाओं के लिए निर्दिष्ट द्रव्यगुण विज्ञान विषयक के पाठ्यक्रम व पाठ्यपुस्तकें, पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल को निम्नलिखित संस्तुतियाँ की गई :—

(क) श्री-आयुर्वेद परीक्षा 1982

(i) उद्भिज्जांगप्रत्यंगविज्ञानम् विषयः प्रायोगिक परीक्षा के लिए निर्धारित वनस्पतिकुलों (फ्लेमेलिज) को रखना उचित है।

(ii) उद्भिज्जांगप्रत्यंगविज्ञानम् की प्रायोगिक परीक्षा 100 अंक की होनी चाहिये। 50 अंक प्राचीन के लिए होना चाहिये और 50 अंक आधुनिक विषय के होने चाहिये तथा बाह्य परीक्षक आधुनिक विषय और आन्तरिक परीक्षक प्राच्य विषयों के होना चाहिये। इस आशय की संस्तुति को भारतीय चिकित्सा केन्द्रीय परिषद को मण्डल द्वारा उस पर विचारोपरांत भेजा जावे।

(ख) तृतीय वर्ष आयुर्वेदाचार्य (बचलर आफ आयुर्वेदिक मंडीसिन एण्ड सर्जरी) परीक्षा, 1984

(i) समिति ने प्रदर्शनालय को उपर्युक्त एवं परमावश्यक मानते हुये संस्तुति की कि अब महाविद्यालय के पास कम से कम 10 एकड़ जमीन व उद्यान वनोपधि के लिए होना आवश्यक है। कम से कम 200 शुष्क द्रव्य के नमूने प्रदर्शनालय में रखे जाने चाहिये। छात्रों के लिये स्थानीय, अन्तर्देशीय वन प्रान्तों की यात्रा, वनोपधि संग्रह व प्रायोगिक ज्ञानार्थ, अपेक्षित है।

3. आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद परीक्षा) खण्ड I (प्रारम्भिक) परीक्षा 1981 :

(क) भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित स्नातकोत्तर पाठ्यक्रम की प्रतियां बैठक में प्रस्तुत की गईं। परिशिष्ट (I) समिति ने यह अपेक्षा की कि पूर्ण मनन एवं विचार हेतु उन्हें पहले ही भेजा जाना चाहिये था।

एतदर्थ समिति ने भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित उपर्युक्त पाठ्यक्रम को अस्थायी रूप से स्वीकार किया और संस्तुति की कि अन्तिम रूप देने के लिए भी उस पर विस्तृत विचार करना आवश्यक है।

(ख) द्रव्य गुण विज्ञान विषय में स्नातकोत्तर अध्ययन जामनगर एवं बनारस विश्वविद्यालय में चल रहे हैं। समिति ने संस्तुति की कि पाठ्यक्रम निर्धारित करने के लिए वहां का पाठ्यक्रम भी मंगा लिया जावे।

अन्त में सभी सदस्य महानुभावों को धन्यवाद समर्पित करते हुये कार्य-वाही समाप्त की गई।

ह०/-

वैद्य हनुमत्सहाय शर्मा  
संयोजक

## परिशिष्ट I

( समिति की संस्तुति संख्या 3 (क) )

आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद द्रव्यगुण विज्ञान) परीक्षा

(अ) सत्र (1) प्रारम्भिक परीक्षा, 1982

तृतीय पत्रम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

द्रव्यगुणविज्ञानं रसशास्त्रं च होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

1. द्रव्यगुणशास्त्रे वर्णितानां सिद्धान्ताः व्यावहारिकं तथा विशिष्टं ज्ञानम् । विशिष्टं गणनां वर्णनां च विवेचनम् । रस-गुण-वीर्य-विषयक-प्रभाव सिद्धान्तस्य व्यावहारिकमहत्त्वम् । द्रव्यानुसन्धानस्य नव्यविधीनां ज्ञानम् ।

2. रसद्रव्याणां वर्गीकरणं वर्गीकरणस्य व्यावहारिकमहत्त्वं, वातु-पवातुरत्नोपपत्तिं विषोपविषादीनां परिचयः तेषां एके प्रमुखाः योगाश्च ।

3. पंचविधकषायकल्पना, असवारिष्ट कल्पना, भस्म-लोह-मण्डूर-रसोपवकल्पना, घृततैलकल्पना, अवलेहपाककल्पना प्रभृतिनां व्यावहारिकं महत्त्वं । भैषज्यकल्पनायाः नव्यविधीनां यन्त्रणां च ज्ञानम् ।

(ब) सत्र (2) (उत्तरार्द्ध) परीक्षा, 1983

प्रथमपत्रम् नामरूपविज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

द्रव्याणां नामज्ञानस्य महत्त्वं वेदेषु ओषधीनां नामरूपज्ञानस्य बीजम् । ओषधीनां विविधनामकरणम्, तन्मात्रां पर्यायाणां च सोपपत्तिकं वर्गीकृतं च निर्वचनम् नामसंग्रहकल्पस्य निवर्णः स्वल्पं विकासक्रमश्च । अन्तरि-राजनिषण्ड प्रभृतिनिषण्डानां सर्वेषां परिचयः कार्यपद्धतिज्ञानं च ।

रूपज्ञानस्य प्रयोजनं, ओषधीनां स्थूलाकृतिविवरणां सूक्ष्मरचनाविवरणां च, उपद्रुक्तद्वयोपकरणानां परिचयः कार्यपद्धतिज्ञानं च ।

द्वितीय पत्रम् गुणकर्मविज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

नैतिकसिद्धान्तानां रसगुणवीर्यवित्तकादीनां विवेचनम्, औषधद्रव्याणां आहारद्रव्याणां च गुणकर्म ज्ञानम् अथाववि शोधाधारितम् ।

तृतीय पत्रम् प्रयोगविज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50  
 औषधद्रव्याणां आहारद्रव्याणां च विविधामयेषु संप्राप्तिमूलकं संयुक्तिकं  
 प्रयोगज्ञानम् ।

चतुर्थ पत्रम् औषधोगविज्ञानम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50  
 प्रसिद्धानामौषधयोगानां विवरणात्मकं संयुक्तिकं च प्रयोगज्ञानं च,  
 कर्मक्षेत्रं निरूपस्य च । द्रव्यसंयोग-विरोध-मात्रा-अनुमानादीनां भावानां विचारः ।

आलोच्य ग्रंथा :—

1. ऋग्वेदस्य औषधिसूक्तं सायणभाष्यसहितम् ।
2. चरकसुश्रुतवाग्भटादीनामुपयोगिनांङशाः ।
3. द्रव्यगुणविज्ञानम्—यादवजी त्रिकमजी आचार्य ।
4. द्रव्यगुणविज्ञानम्—आचार्य प्रियव्रत शर्मा ।
5. औषधगुणधर्मशास्त्र—पं. विश्वनाथ द्विवेदी ।
6. क्रियात्मक औषधि परिचय विज्ञान—पं. विश्वनाथ द्विवेदी ।
7. धन्वन्तरिनिघण्टुः राजनिघण्टुसहितः ।
8. शाङ्गधरसंहिता ।
9. योगरत्नाकर ।
10. औषधगुणधर्मशास्त्र—पं. गंगाधरशास्त्री गुरो ।
11. Text Book of Pharmacology—Wallis
12. Text Book of Pharmacology—Trease & Evans.
13. Pharmacology of Ayurvedic Drugs—Narayan Iyer  
(Kerala University)
14. Glossary of Vegetable Drugs in Brihatrayas—Thakur  
Balwant Singh & K.C. Ghunaekar.
15. The Pharmacological Basis of Therapeutics—  
Godmen & Gilman.
16. Soruning Methods in Pharmacology—Turner.

## परिशिष्ट V

(संदर्भ मण्डल की संस्तुति संख्या 5 (5) )

दिनांक 26 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण में आयोजित रसशास्त्र भैषज्य कल्पना विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थित

1. वैद्य नन्दन लाल शर्मा, (संयोजक)
2. वैद्य ब्रज मोहन वर्मा,
3. वैद्य कृष्ण दत्त जोशी,

1. सर्वप्रथम राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिचयन 42 एफ (4) (1) के अनुसार समिति के संयोजक पद के लिए माननीय वैद्य नन्दन लाल शर्मा, आयुर्वेद अध्ययन मण्डल, आचार्य स्नातकोत्तर रसभैषज्य कल्पना विभाग, स.मो.मा. राजकीय आयुर्वेद महाविद्यालय, उदयपुर का सर्व-सम्मति से चयन किया गया तत्पश्चात् समिति का कार्यक्रम प्रारम्भ किया गया ।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित अंकित वर्षों की परीक्षाओं के लिये निर्दिष्ट रसशास्त्र एवं भैषज्य कल्पना विषय के पाठ्यक्रम तथा पाठ्यपुस्तकों पाठ्य योजना एवं परीक्षा योजना को निर्धारित करने की मण्डल को निम्नलिखित संस्तुतियाँ की गई :—

(क) प्री-आयुर्वेद परीक्षा, 1982

उक्त परीक्षा के लिये संशोधन परिशिष्ट I के अनुसार किये गये ।

पाठ्यपुस्तकों के निर्धारणार्थ संयोजक महोदय को अधिवृत्त किया गया तथा संस्तुति की गयी कि अध्ययन मण्डल पाठ्यक्रम का निर्धारण विषय-ज्ञान को महत्वपूर्ण समझते हुए एक प्रकार की नीति का निर्धारण करें ।

(ख) तृतीय वर्ष आयुर्वेदशास्त्र (डिप्लोमा ऑफ आयुर्वेदिक मेडिसिन एण्ड सर्जरी) परीक्षा, 1984.

- (1) द्वितीय पत्र भैषज्य कल्पना के 'क्रियात्मक' शीर्षक के क्रमांक 4 जो पाठ्यक्रमावली 1979 संस्करण के पृष्ठ 73 पर मुद्रित है को निम्न प्रकार से लिखा जाए क्योंकि जो प्रायोगिक निर्धारित किये गये हैं वे कल्पना के प्रतीक के रूप में स्वीकार किये गये ।

"4 अधोलिखितानाम् कल्पनानाम् निर्माणभावस्यकम्"

- (2) आलोच्य ग्रन्थ : शीर्षकान्तर्गत निम्नलिखित आलोच्यग्रन्थ और जोड़े जावें :—

रसशास्त्रे आलोच्य ग्रन्था :

13. सिद्ध भैषज्य नरिणमाला—श्री कृष्णराय भट्ट, जयपुर ।
14. रस प्रकाशिका—श्री रामकृष्ण ढंड, जयपुर ।
15. आयुर्वेदीय रसशास्त्र—श्री बट्टी प्रसाद पाण्डे, लखनऊ
16. योग रत्नाकर—स्टेट आयुर्वेद कालेज, लखनऊ

भैषज्यकल्पनायां आलोच्य ग्रंथा :

9. चक्रदत्तः—चक्रगणिकृत
10. सिद्धभैषज्यनरिणमाला : श्री कृष्ण राय भट्ट, जयपुर
11. योग रत्नाकर—

- (3) रसशास्त्र—भैषज्य कल्पनाओं का मानव शरीर पर प्रयोग परमावश्यक समझते हुए इसका आनुसालय में प्रयोगात्मक ज्ञान अविलंब प्रारम्भ किया जावे जिसके लिए इस विषय के 350 के स्थान पर 400 अंको का नूतनांकन निर्धारित किया जाना उचित होगा । स्वतंत्र रूप से 50 अंक रस भैषज्य कल्पना आनुसालय भैषज्यकी के रूप में स्वीकृत किया जावे । क्योंकि विद्यार्थी को रस भैषज्यकल्पना के अध्ययन के क्रम में आनयिक प्रयोगों का अध्यापन कराया जाता है जिसका क्रियात्मक रूप से परिज्ञान कराया जाता है इसकी मौलिकताओं को किंचित भी विकसित नहीं कर पाता । चिकित्सा क्षेत्र में इस विषय की आनुसालयीय भैषज्यकी को परमावश्यक स्वीकृत करते हुए विभिन्न विश्वविद्यालयों के पाठ्यक्रमों में इस विषय को क्लीनिकल स्वीकार किया गया है । वर्तमान में इस विषय में स्नात-



. कोत्तर प्रगिरण प्रारम्भ हो चुका है जिसमें इसे क्नीतिकल नाना गया है । यदि विद्यार्थी ने एतद्विषयक प्रायोगिक प्रगिरण का अभ्यास स्नातक स्तर से नहीं रखा तो स्नातकोत्तर प्रगिरण में भी सम्बन्धित विषय का वैदिक परिजान सहज सम्भव होना अव्यवहारिक है । अतः उक्त व्यवस्था नितान्त आवश्यक है ।

- (ग) आयुर्वेद वाचस्पति (एन. डी. आयुर्वेद) खण्ड I (प्रारम्भिक) परीक्षा, 1981 :

प्रथम खण्ड प्रारम्भिक परीक्षा :

इस परीक्षा के प्रसंग में भा. वि. के. प. द्वारा प्रेषित पाठ्यक्रम योजना के संदर्भ में प्रथम वर्षीय विषय द्रव्यगुण विज्ञान रसास्त्र सम्मिलित लिखित है । इन संदर्भ में सैद्धान्तिक पृष्ठभूमि में प्रेषित पाठ्यक्रम को यथावत स्वीकार हुए विश्लेषणात्मक परीक्षा जिसका विवेचन फैंकल्टी आफ आयुर्वेद के सेलेबस जो वर्तमान में चल रहा है उसे जेयोग के अन्तर्गत में स्वीकृत रखा जावे क्योंकि बिना इन जेयोगों के परीक्षार्थी का परीक्षण अव्ययन क्रम का स्वरुप सुसंगठित नहीं हो पाता । अतः नवीन जेयोगों के अप्राप्त होने तक इन्हीं जेयोगों को यथावत निरंतर रखा जावे ।

- (घ) आयुर्वेद वाचस्पति (एन. डी. आयुर्वेद) खण्ड 2 (उत्तरार्ध) परीक्षा, 1983.

खण्ड II :—इस परीक्षा में चार विषय हैं । द्रव्य परिचय, रसास्त्र मेषज्यकल्पना और औषधयोग विज्ञानम् इन्हें भा वि. के. प. द्वारा निर्धारित (परिगण्ड II) क्रमानुसार यथावत स्वीकार करते हुए चारों ही विषयों के जेयोग जो प्रेषित पाठ्यक्रम में अनुचित है उन्हें राजस्थान विश्वविद्यालय आयुर्वेद संकाय (सेलेबस) वर्तमान पाठ्यक्रम में वर्णित जेयोगों को यथावत निरंतर रखा जावे क्योंकि बिना इन जेयोगों की हनिका के परीक्षा का क्रियान्वयन पूर्ण नहीं होता अतः नवीन जेयोगों की उपनवि से पूर्व तक इन्हें प्रारम्भ रखना समुचित है ।

सम्बन्धित विषयों के पाठ्यग्रंथ प्रथम खण्ड व द्वितीय खण्ड आलोच्य ग्रंथों को स्वीकार करते हुए फैकल्टी आफ आयुर्वेद राजस्थान विश्वविद्यालय द्वारा विस्तृत एवं ज्ञेयांशों की पूर्ति के निमित्त विस्तृत ग्रंथ सूची को भी आलोच्य ग्रन्थों में स्वीकार किया जावे। विना इसके विषय का परीक्षा निमित्त उपादान पूर्ण रूप से व्यावहारिक नहीं हो पाता।

स्नातकोत्तर प्रशिक्षण द्वितीय खण्ड में रसशास्त्र एवं भैषज्य कल्पना विज्ञान विषयों का मानव शरीर पर आतुरालयीय परिज्ञान प्रयोगात्मक रूप से होना परमावश्यक है। प्रायोगिक परीक्षा के अन्तर्गत चारों ही विषयों का प्रायोगिक परीक्षण एक ही प्रश्नपत्र द्वारा मूल्यांकन किया जाता है। जिसके अन्तर्गत रस भैषज्य कल्पनाओं का आतुर भैषज्यकी रूप में क्रियात्मक ज्ञान अनिवार्य रूप से व्यवहार में लाया जावे विना इसके कर्मक्षेत्र निरूपणात्मक प्रयोजन सिद्धि का विद्यार्थी के समक्ष सर्वथा अभाव बना हुआ है।

अन्य सभी नामों में जिनका मूल प्रेषित पाठ्यक्रम में विश्लेषण नहीं है उनकी पूर्ति राजस्थान विश्वविद्यालय द्वारा चालू पाठ्यक्रम के आधार पर यथावत रखी जावे।

समिति अपने निर्दिष्ट कार्यक्रम को रवीन्द्र भारती के सहयोग से पूर्ण करती है और अवशिष्ट विषय जो समिति के कार्यक्रमों में उल्लिखित किये गये हैं विस्तार से विचार करना आवश्यक मालूम होता है जिन्हें विश्वविद्यालय के रेगुलेशन नं. 42 एफ 5 में उल्लिखित किया हुआ है। सभी संदर्भों में स्वल्प समय में चिंतन नियमोपनियमों का सुझाव दिया जाना सम्भव नहीं हुआ है।

समस्त महानुभावों को धन्यवाद करते हुए कार्यवाही विसर्जित की जाती है।

ह०/-

(चैद्य मदन लाल शर्मा)

संयोजक

## परिशिष्ट I

(संदर्भ समिति की निश्चय संख्या 2 (क) दिनांक 25/10/79 पृष्ठ 28)

## प्रारम्भिक रसशास्त्र परिचय

समय 3 घण्टे होरात्रयम्	पूर्णांका 50	न्यूनतमोत्तीर्णांका 25
1. एकोविंशष्ट प्रयोग रसशास्त्रस्य		10
2. एकःसामान्य प्रयोग रसशास्त्रस्य		5
3. एकोविंशष्ट प्रयोग रसायनशास्त्रस्य		10
4. एक माइनर प्रयोग रसायनशास्त्रस्य		5
5. वाइवा दोस (लघु) रस-रसायने	5 + 5	10
6. प्रयोगिक पंजिका	5 + 5	10
		-----
		50
		-----

## आयुर्वेदीय रसशास्त्र परिचय

परिचय :

(1) महारस एवं उपरस्ताना परिचय :—

(1) पारद (2) हिंगुल (3) गंधक (4) हरिताल (5) मनःशिला (6) शिलाजतु (7) गैरिक (8) टंकण (9) नरसार (10) अंजनम् (11) स्फटिका (12) तुष्यम् (13) कात्तीसम् (14) माक्षिक (15) अन्नक (16) स्वर्णम् (17) रजतम् (18) ताम्र (19) लौहम् (20) नागः (21) वंग (22) यशदः (23) मण्डूर (24) मुक्ताः (25) प्रवालः (26) शुक्ति (27) शंख (28) वल्लुर्द (29) शृंगम् (30) गोदंती (31) पन्ना भरकृतः (32) वैदूर्य (33) पुष्परागः (34) गोमेदः (35) माणिक्यम् (36) नीलम विः (37) हीरकः (38) फेनाश्म (39) वत्सनामः (40) विषमुष्टि (41) जयपाल (42) भल्लातक ।

(2) पंचविध कषाय कल्पना परिचय :—

(क) स्वरस (ख) कल्क (ग) क्वाय (घ) हिम (ङ) फाण्ड

(3) मान भेद परिचय :—

(अ) नागवनामन् (आ) कर्णवनामन् (इ) वासनलिकनमन्  
रसायनशास्त्र परिचय प्रायोगिक कार्यस्य आरम्भः—

निम्नांकित प्रायोगिक कार्यं कराये जायैः—

1. निम्नलिखित अत्रयुक्तों को पृथक्-पृथक् करना ।
2. तीन मुख्य अम्लों की पहचान ।  
(गन्धकान्द्र, लवणान्द्र, व शोरे का अम्ल)
3. अम्ल, क्षार व लवण में भेद ।
4. प्रयोगशाला में निम्नांकित गैसों का निर्माण एवं उनके गुणों का परीक्षण :—

1. हाइड्रोजन
2. आक्सीजन
3. नाइट्रोजन
4. कार्बन डाई आक्साइड
5. आम्लीय व क्षारीय मूलकों की पहचान

आम्लीय मूलक—कार्बोनेट, क्लोराइड, ब्रोमाइड, नाइट्रेट  
व सल्फेट क्षारीय मूलक—लिथियम, पोटैशियम, सोडियम, मैग्नीशियम, अमोनियम, एंटीमनी,  
कोबाल्ट ।

परिशिष्ट (II)

( संदर्भ समिति की संस्तुति संख्या 2 (घ) )

आयुर्वेद वाचस्पति एम०डी० आयुर्वेद (रसशास्त्र भैषज्य कल्पना)

खण्ड II (उत्तरार्द्ध) परीक्षा, 1983

रसशास्त्रं भैषज्यकल्पना च

प्रथमपत्रम्—द्रव्यपरिचयः

होरात्रयम् पूर्णांका 100

न्यूनतमोत्तीर्णांकः 50

रस-महारस उपरस-सावारणरस धातु-उपधातु रत्न-उपरत्न-लवण-क्षार-मुवा-सिकतादिस्थावराणां, शृंग-कस्तूरी-अग्निजारादीनां ज्ञान्तवानां, विष-उपविष-त्रिफला दशमूलादीमांमोदद्रव्याणां च नामरूपात्मकः परिचयः वर्गीकरणम् प्राप्तिस्थानं, ग्राह्याग्राह्य-स्वरूपज्ञानं च । औदभिदद्रव्याणां स्थूला-कृतिविवरणं सूक्ष्मरचनाविवरणं च, तदुपयोगियन्त्रोपकरणादीनां परिचयः कार्यं पद्धतिज्ञानम् ।

द्वितीयपत्रम्—रसशास्त्रम्

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांक 50

रसशास्त्रस्य स्वरूपमेतिहासिकविकासक्रमश्च, रस-महारस-उपरस-सावारणरस-धातुपधातुरत्नोपरत्न-लवणाक्षारादीनां ज्ञानम् । संतस्काराणां शोषनमारणसत्त्वपातनादीनां नानाविधीनांश्च ज्ञानम् विमर्शात्मकं व्यावहारिकं च ।

मृपा-पुट-यन्त्रादीनां विविधोपकरणानां ज्ञानम् ।

कूपीपक्वरस-पोट्टलीकलम-प्रमुख कल्पानां च निर्माणम् ।

रसोपधीयशोषकर्मणा अद्यतनज्ञानम्

तृतीयपत्रम्—भैषज्यकल्पनाम्

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांका 50

विविधाः भैषज्यकल्पना एतैषां स्वरूपमेतिहासिकमध्ययनं च, भैषज्य-कल्पनाय संरक्षणं सवीर्यतावविज्ञानं च आयुर्वेदीयमानस्य तुलनात्मकं ज्ञानम् ।

कपाधावलेहस्नेहसन्धानादिकल्पनानां निर्माणज्ञानम् ।

कल्पानां मानवीकरणविधयः सवीर्यतापरीक्षणं च, परिभाषाप्रकरणम् ।

भैषज्यकल्पनार्थं प्रयुज्यमानानामाधुनिकमाधुनिकमन्त्रोपकरणादीनां परिचयः ।

चतुर्थपत्रम्—औषधयोग विज्ञानम्

होरात्रयम्

पूर्णांका 100

न्यूनतमोत्तीर्णांकाः 50

प्रसिद्धानामौषधसंयोगानां विवरणात्मकं सद्युक्तिकंच प्रयोगज्ञानम्, कर्म-  
क्षेत्रनिरूपणं च द्रव्यसंयोग-विरोध-मात्रा अनुमानादीनां भावानां विचारः ।

आलोच्यग्रंथा :

1. क्रियात्मक औषधविपरिचय विज्ञान—विश्वनाथ द्विवेदी
2. शार्ङ्गधरसंहिता
3. योगरत्नाकरः
4. औषधगुणधर्मशास्त्र-गंगाधरशास्त्री गुरो
5. रसेन्द्रचिन्तामणिः
6. पारदविज्ञानीयम्—वासुदेव द्विवेदी
7. रसरत्नसमुच्चयः ।

## परिशिष्ट VI

( संदर्भ समिति की संस्तुति संख्या 5(6) )

दिनांक 26 अक्टूबर, 1979 को मध्याह्न 12 00 बजे कुलपति सचिवालय में आयोजित रोग विज्ञान एवं विकृति विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

### उपस्थित

1. वैद्य राधा कांत शर्मा,
2. वैद्य दौलत राम चतुर्वेदी,
3. वैद्य वासुदेव शास्त्री (विशेष आमंत्रित)
4. वैद्य रंगनाथ शर्मा (संयोजक)

1. राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिचय 42एफ : (4)(1) के प्रावधानान्तर्गत वैद्य रंगनाथ शर्मा, सदस्य आयुर्वेद अध्ययन मण्डल, विभागाध्यक्ष, रोग विज्ञान एवं विकृति विज्ञान, म०मो०मा० राजकीय आयुर्वेद महाविद्यालय, उदयपुर को रोग विज्ञान एवं विकृति विज्ञान विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजनार्थ 3 वर्ष की कालावधि के लिए संयोजक नियुक्त किया ।

2. आयुर्वेद संकायान्तर्गत निम्नांकित वर्ष की परीक्षाओं में निर्दिष्ट रोग विज्ञान एवं विकृति विज्ञान विषय के पाठ्यक्रम तथा पाठ्यपुस्तक, पाठ्य योजना को निर्धारित करने की मण्डल को निम्नलिखित संस्तुति की गई ।

(क) तृतीय वर्ष आयुर्वेदाचार्य (वैचलर आफ आयुर्वेद मंडीसन एण्ड सर्जरी) परीक्षा 1984—

1. निश्चय किया कि भारतीय चिकित्सा केन्द्रीय परिपद द्वारा निर्धारित एवं मण्डल द्वारा अनुमोदित रोग विज्ञान एवं विकृति विज्ञान विषय के पाठ्यक्रम में प्रथमपत्र की परीक्षा द्वितीय वर्ष के अन्त में तथा द्वितीय वर्ष की परीक्षा तृतीय वर्ष में लेने का प्रावधान किया जावे ।

2. निश्चय किया कि प्रथमपत्र में निर्धारित पाठ्यक्रम को दो खण्डों, क एवं ख में विभाजित किया जावे । जिसके अंक 50-50 निर्धारित किये जावें । खण्ड 'क' में 1 से लेकर 6 तक ज्ञेयांश निर्धारित किये जावें । खण्ड 'ख' में 7 से 13 तक के ज्ञेयांश निर्धारित किये जावें ।

3. निश्चय किया कि द्वितीय प्रश्नपत्र के लिए निर्धारित पाठ्यक्रम को भी दो खण्डों 'क', 'ख' में विभाजित किया जावे, दोनों के समान अंक होंगे, खण्ड 'क' में 'ज्वर' से लेकर 'शीतला' तक, तथा खण्ड 'ख' में 'फिरंगः' से लेकर "गंडमाला" तक के रोग पाठनीय हैं।
4. निश्चय किया कि प्रत्याक्षिकाणी के लिए निर्धारित परीक्षा में प्रायोगिक परीक्षा 20 अंक निरस्त कर उसके स्थान पर रिकार्ड 10 अंक, और मौखिक 20 अंक के स्थान पर 30 अंक निर्धारित किया जावे।
5. प्रायोगिक के लिए निर्धारित ज्ञेयांशो में क्रमांक 7 पर "दोष भेदेन नाडी परीक्षा परिज्ञानम्" शब्द अंकित किया जावे।
6. आलोच्चग्रथा शीर्षकान्तर्गत 10 वें क्रमांक पर "अंजन निधान नामक पुस्तक का समावेश किया जाना चाहिये।
7. निश्चय किया कि मौखिक परीक्षा हेतु छात्रों को कम से कम निदान पंचक तक ज्वर, अतिसार, गृहणि, राजयक्ष्मा, प्रमेहः के निदान सम्प्राप्ति प्रक्रिया श्लोकबद्ध होना चाहिये और छात्रों द्वारा श्लोक कंठस्थ पर ही अंक दिया जाना चाहिये।

(ख) आयुर्वेद वाचस्पति एम.डी. आयुर्वेद खण्ड 1 (प्रारम्भिक) परीक्षा 1981 :—

1. भारतीय चिकित्सा केन्द्रीय परिपद से उपरोक्त परीक्षा के लिए निर्धारित पाठ्यक्रम पर विचारोपरान्त निश्चय किया कि यह पाठ्यक्रम निदान विषय पर्याय है उसे उपरोक्त परीक्षा हेतु यह स्वीकार करने की संस्तुति करने हेतु समिति ने आवश्यक समझा कि इस पाठ्यक्रम के अन्तिम में निम्न शब्द अंकित किये जावें।

“सूचनाः—परीक्षार्थिनां कृते प्रश्नानामुत्तरप्रदानं तत्तद् विषयक श्लोकोद्धरणपुरस्सरं आवश्यकम्।”

2. निश्चय किया कि चूंकि भारतीय चिकित्सा केन्द्रीय परिपद द्वारा निर्धारित पाठ्यक्रम को समिति ने स्वीकार करने की संस्तुति की है। इसलिए राजस्थान विश्वविद्यालय की हैण्ड-बुक



के तत्सम्बन्धित निम्नलिखित नियमों में निम्नांकित संशोधन संस्तुत किये गये :—

- (अ) O.329 एन 23 के 4 क्रमांक में निदान शब्द के पश्चात् समस्त शब्द निरस्त किया जावें ।
- (ब) आर. 43 एफ : के पार्ट (I) के 4 क्रमांक में निदान शब्द के पश्चात् ( With vikriti vigyan and Jeevanu vigyan practical clinial 100-50) शब्द निरस्त किया जावें ।

संकाय की बैठक संयोजक को धन्यवाद के प्रस्ताव के साथ समाप्त हुई ।

ह०/-  
(वैद्य रंगनाथ शर्मा)  
संयोजक

## परिशिष्ट I

( संदर्भ समिति की संस्तुति संख्या 2 ख (1) )

आयुर्वेद वाचस्पति ( एम. डी. आयुर्वेद रोग विज्ञान ) परीक्षा खण्ड (1)  
प्रारम्भिक परीक्षा, 1981.

निदानम्            होरात्रयम्            पूर्णांका 100            न्यूनतमोत्तीर्णांका 50

रोगरोगि परीक्षाणां विविधाः विषयाः, विशेषतः द्विविधत्रिविधचतुर्विध-  
पंचविधमङ्गविधाष्टविधदशविधपरीक्षाणां सांगोपांगध्ययनं क्रियाक्षेत्रे च तासां  
विशेषोपादेयता ।

विकृत दोषाधातुमलानां परीक्षणम् विभिन्न रोगेषु परीक्षस्योपयोगिता-  
हृष्टस्य विचार दोषधातुमलानामावरणानि, तैषां समीचीनज्ञानम् आवरणजनितल  
क्षणानां रोगोत्पत्तौ विकृतदोषधातुमलानां परीक्षणम्, विभिन्नरोगेषु परीक्षाणस्यो-  
पयोगितादृष्ट्या विचार दोषधातुमलानामावरणानि, तैषां समीचीनज्ञानम्  
आवरणजनितलक्षणानां रोगोत्पत्तौ विशिष्ट हेतुत्वप्रतिपादनम् । आशयापकर्षाः त्रयो  
रोगमार्गाः नैदानिकदृष्ट्या संचयादिक्रिया कालविवेकः, रोगाणां सम्प्राप्तिनिर्माण-  
प्रक्रियायाः विशिष्टज्ञानं, रोगोत्पत्तौ सम्प्राप्तिनिर्माणस्य विशेषमहत्त्वम् ।  
प्राकृतव्याधिप्रत्यनीकत्वं च । अरिष्टविज्ञानस्य विचारः ।

## परिशिष्ट VII

(संदर्भ मण्डल की संस्तुति संख्या 5 (7))

दिनांक 26 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय, विश्वविद्यालय प्रांगण में आयोजित स्वस्यवृत विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थित

1. श्री मुरली मनोहर शरण,
2. श्री सुरेश चन्द्र चतुर्वेदी,
3. श्री रमाकान्त शर्मा,
4. श्री हरि प्रसाद शर्मा, (संयोजक)

1. समिति ने सर्वप्रथम राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनियम 42 एफ (4) (1) के अनुसार निर्धारित वरीयता क्रम से बोर्ड आफ स्टेडीज के सदस्य वैद्य हरि प्रसाद शर्मा, विभागाध्यक्ष स्वस्यवृत, परशुरामपुरिया आयुर्वेद महाविद्यालय, सीकर को 3 वर्ष की कालावधि के लिए स्वस्यवृत विषयक आयुर्वेद शिक्षण एवं अनुसंधान समिति का संयोजक निविरोध रूप से निर्वाचित किया ।

2. कार्यसूची के बिन्दू संख्या 2 के अनुसार द्वितीय वर्ष आयुर्वेदाचार्य (B.A.M.S.) 1983 के लिए भा. चि. के. प. के द्वारा निर्धारित स्वस्यवृत विषय के पाठ्यक्रम पर विस्तार पूर्वक विचार विमर्श हुआ जिसके फलस्वरूप उक्त समिति ने निम्नलिखित परिवर्तन एवं परिवर्धन अपेक्षित मानकर स्वीकृत किया :—

1. पाठ्यक्रम के पृष्ठ संख्या 21 पर लिखित स्वस्यवृत के आगे द्वितीय आयुर्वेदाचार्य (B.A.M.S.) जोड़ दिया जावे जिससे विषय एवं परीक्षा का प्रसंग स्पष्ट हो सके ।
2. स्वस्यवृत के दोनों सैद्धान्तिक प्रश्नपत्रों के ज्ञेयांशों एवं उनके वर्ग क्रम में प्रसंग की सामीप्य के कारण निम्नलिखित परिवर्तन करने की संस्तुति की गई :—

(क) प्रथम प्रश्नपत्र के 'ख' वर्ग सामाजिक स्वस्यवृत के स्थान पर द्वितीय भाग "आहारविधि आहारपोषण च" के ज्ञेयांशों को अंकित किया जाये । जबकि द्वितीय प्रश्नपत्र

के द्वितीय भाग 'आहारविधि आहार पोषणं च' के स्थान पर प्रथम प्रश्नपत्र के 'ख' वर्ग के "सामाजिक स्वस्थवृत्तम्" को अंकित किया जाय।

(ख) "आहारविधि आहार पोषणं च" का नामकरण "आहार विज्ञानीयम् एवं सामाजिक स्वस्थवृत्तम्" का नामकरण "सामाजिक सार्वजनिक च स्वास्थ्य विज्ञानम्" किया जावे। इस प्रकार स्वस्थवृत्त के दोनों सैद्धांतिक प्रश्नपत्रों को इस प्रकार विभाजित किया गया :—

स्वस्थवृत्त प्रथमपत्र :

प्रथम भाग—वैयक्तिक स्वस्थवृत्तम्

द्वितीय भाग—आहार विज्ञानीयम्

स्वस्थवृत्त द्वितीयपत्र :

प्रथम भाग —योगनैसर्गिकोपचाररश्चः

द्वितीय भाग —सामाजिक सार्वजनिक च स्वास्थ्यवृत्तम्

3.

(क) स्वस्थवृत्त के प्रथम पत्र के क वर्ग के प्रथम ज्ञेयांश में दिनचर्या शब्द से सभी भाषा स्पष्ट हो सके इसलिए इसके बाद निम्न-लिखित ज्ञेयांश जोड़ दिया जावे :—

ब्राह्मी मुहुर्ते उत्थानम्, प्रातः स्मरणम् उपःपानं, मलोत्सर्गं दन्तधावनं जिह्वानिलस्नानम्, कवल, गण्डूष, प्रातः भ्रमणम्, शरीर आयासादिकच, अभ्यंग, नस्य, उर्दतन, व्यायाम, आसन वस्त्रधारण, ध्यान आराधनादि कम्, प्रातराश (ब्रेकफास्ट) भोजन, ताम्बूल, घुन्नपान (ताम्बूलपत्रवर्जितम्) दिवाकृत्यम् (दैनिककार्य) सांयकालीन क्रीडनचक्रमणादिकम्।

(ख) रात्रिचर्या शब्द से सभी भाव स्पष्ट नहीं होते अतः रात्रिचर्या के बाद निम्नलिखित ज्ञेयांश और जोड़ दिये जावे—

'निव्रविचार, निद्राकाल, सुखनिदाकर भावाः संवाहनादि, पयःपान।

(ग) स्वस्थवृत्त के प्रथम पत्र के वर्ग की द्वितीय पंक्ति में नद्वृत्त के आगे आचार रसायन शब्द जोड़ दिया जावे।

- (घ) सामाजिक स्वस्थवृत्त के वर्ग के ज्ञेयांशों में अन्त में वातानुकूलन विचारः' और जोड़ दिया जावे ।
- (ङ) पृष्ठ संख्या 24 पर अंकित 15वें ज्ञेयांश आहारद्रव्यणि के बाद एवं भेज्यावयवतः के पूर्व निम्नलिखित ज्ञेयांश जोड़ दिया जाय—  
'अन्नद्रवस्य पांचभौतिकत्वम् प्रायेण सेन्द्रियात्वम्, स्वस्थहित-द्रव्याणायेव आहार द्रव्यत्वम् पार्थिवादि द्रव्याणां गुणकर्माणि ।'
- (च) 15 वें ज्ञेयांश की अंतिम पंक्ति के बाद 16वें नवीन ज्ञेयांश को और जोड़ दिया जाय और उसमें निम्नलिखित विषयों का समावेश किया जावे—

सदापथ्यद्रव्याणि, निन्दितानिन्दित शाकानि,

- (छ) पृष्ठ संख्या 25 पर अंकित प्रात्याक्षिकाः विषयाः के ज्ञेयांश नं० 11 के बाद नवीन ज्ञेयांश और बढ़ाये जावें जिसमें निम्नलिखित विषयों का समावेश किया जावे :—

12. शुद्धाशुद्ध दुग्ध एवं जल परीक्षा

13. शुद्धाशुद्ध आहारोपयोगि द्रव्याणां रासायनिक परीक्षा :

- (ज) प्रत्यक्ष परीक्षायाः गुणविभाजनम् के अन्तर्गत प्रात्यक्षिक पुस्तिका में निम्नलिखित कार्य चियनित करना होगा :—

1. सैद्धान्तिक प्रश्नपत्र में वर्णित 18 आसनों का सचित्र वर्णन ।
2. स्वास्थ्य परीक्षा विधानम् ( स्वास्थ्य परीक्षा पत्रक के अनुसार ) ।

नोट :—स्वास्थ्यपरीक्षा पत्रक पृथक से निर्मित करके प्रेषित किया जायेगा ।

विश्वविद्यालय के प्रतिनिधि श्री रवीन्द्र भारती एवं सदस्य महानुभावों के सहयोग हेतु उन्हें धन्यवाद देने के बाद इस समिति की कार्यवाही विसर्जित की गई ।

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बंछ हरि प्रसाद शर्मा  
संयोजक

## परिशिष्ट VIII

(संदर्भ मण्डल की संस्तुति संख्या 5 (8) )

दिनांक 26 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय विश्वविद्यालय प्रांगण में आयोजित अगदतन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थिति

1. वैद्य रामप्रसाद शर्मा,
2. वैद्य मुरारी मिश्र,
3. वैद्य वेणी माधव शास्त्री,
4. वैद्य द्रव्येश्वर भा, (संयोजक)

1. राजस्थान विश्वविद्यालय हैण्डबुक भाग 2 के परिनियम 42 एफ : (4)

(1) के प्रावधानान्तर्गत निर्धारित योग्यता के अनुकूल समिति में कोई सदस्य नहीं था। इसलिए समिति ने सर्वसम्मति से श्री द्रव्येश्वर भा विभागाध्यक्ष, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को अगदतन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संचालन हेतु 3 वर्ष की कालावधि के लिए संयोजक के पद पर नियुक्त किया गया।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित वर्ष की परीक्षा के लिए निर्दिष्ट अगदतन्त्र विषय के पाठ्यक्रम तथा पाठ्यपुस्तक, पाठ्य योजना परीक्षा योजना को निर्धारित करने को मण्डल ने निम्नांकित संस्तुति की गई।

(क) अगदतन्त्र विषय के विषयतन्त्र शीर्षक के अन्तर्गत क्रमांक 2 निम्न प्रकार लिखा जावे। "विषप्रभावाः द्विविधाः सन्निकृष्टाः (तात्कालिक) विप्रकृष्टाश्च (कलान्तर)"।

(ख) विषपरीक्षण एवं स्वरूप शीर्षक में प्रचलित आधुनिक चिकित्सोपयोगी औषध यथा एन्टीबायोटिक्स, एण्टीपाएरिन, एन्टीएलर्जिक एवं टैक्वीलाइजर्स द्रव्यों के विष प्रभावों का भी परिचय पूर्वक अध्यापन कराया जाना चाहिये। चिकित्सोपयोगी विषद्रव्यों का आयुर्वेदोक्तशोधनप्रकार एवं उससे संस्कारानुवर्तन भी ज्ञात कराया जाय।

गांघ भौतिक परीक्षा में अनुमान शब्द भी जोड़ा जाय  
विपरीक्षा में उत्पत्ति उत्पत्त्यनुसार पद का स्पष्टीकरण भा. चि.  
के. परिपद से ज्ञात किया जाय ।

(ग) विपभेदाः शीर्षक में विषों आधुनिक वर्गीकरण परिचयार्थ  
स्थापति किया जाय ।

(घ) दूषीविषविशेषवर्णनम् आधुनिक औषध का कालान्तर में होने  
वाला दुष्प्रभाव भी रखा जाय । ऐसी दवाइयों के नाम भी  
लिखे जावें ।

(च) स्थावर विष में गन्धकाम्लादीनां शब्द को स्पष्ट कर आदि शब्द  
से उत्पन्न संदेह का दूर कर विषों में नाम एवं संख्या निर्धारित  
की जाय ।

(छ) समिति अपने मत से अनुभव यह करती है कि विषतन्त्र का प्रस्तुत  
भा. चि. के. प. का पाठ्यक्रम अतिसंक्षिप्त है । अतः पूर्व पाठ्य-  
क्रमानुसार विषद्रव्यों का और अधिक परिचय एवं विस्तार इसमें  
समाविष्ट किया जाय । रेडियोविकिरण एवं क्ष-किरण चिकित्सा  
के दुष्प्रभावों को चिकित्सा निर्देशसहित स्थापित किया जाय ।

(ज) मर्यादा शीर्षक के साथ 'चरकविमानोक्त वैद्यकीयोपनिषद् संहिता  
की स्थापना की जाय ।

(झ) व्यवहारायुर्वेद विषयों में निम्न विषय स्थापित नहीं है । उनका  
समावेश किया जाय :—

1. उत्तराधिकार के लिए और औरसयाभिध्या संतति  
निर्णय ।
2. तलाक विषये पति-पत्नी विषयक रोग एवं रोगीपरीक्षा  
पण्डित्व वक्ष्यत्व परीक्षा ।
3. मानसिक रोग परीक्षा तद्ग्रस्त रोगियों के लिए  
व्यवहारायुर्वेदीय नियम परिचय ।

विशेष :—(अ) अगदतन्त्र एवं व्यवहारायुर्वेद विषय की उपयोगिता एवं विस्तार  
के अनुसार इस विषय के दो प्रश्न पत्र रखे जाय । 1. विषतन्त्र

2. व्यवहारायुर्वेद । इसी प्रकार इसका प्रायोगिक एवं मौखिक भी 50 के स्थान पर 100 अंक कराया जाय ।

(आ) विषतन्त्र एवं व्यवहारायुर्वेद विषय के प्रस्तुत पाठ्यक्रमानुसार ग्रंथ निर्माण कराना परमावश्यक है । इस हेतु उपलब्ध कोई भी पाठ्यग्रंथ नहीं है । ऐसी दशायें बहुलेखकीय प्रचलित प्रणाली से ग्रंथ निर्माण विश्वविद्यालय स्तर का कराया जाना अनिवार्यत आवश्यकता है ।

अन्त में संयोजक व सदस्यों के प्रति आभार के पश्चात कार्यवाही सम्पन्न हुई ।

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वैद्य द्रव्येश्वर भ्वा  
संयोजक



## परशिष्ट IX

( संदर्भ मण्डल की संस्तुति संख्या 5 (9) )

दिनांक 27 अक्टूबर, 1979 को राजस्थान विश्वविद्यालय भवन में मध्याह्न 12.00 बजे से आयोजित प्रसूतितन्त्र, स्त्री रोग, बाल रोग विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थित

1. वैद्य नरहरि शास्त्री (संयोजक)
2. डा. वेद प्रकाश शर्मा,
3. डा. शशि रमेश (वाह्य सदस्य)

डा. श्रीमती प्रेमवती तिवाड़ी (वाह्य सदस्य) उपस्थित नहीं हो सकीं ।

1. समिति के संयोजक पद पर श्री नरहरि शास्त्री, सदस्य, आयुर्वेद अध्ययन मण्डल को नियुक्त किया गया ।

2. प्रसूतितन्त्र, स्त्री रोग, बाल रोग विषयक पाठ्यक्रम, पाठ्यपुस्तकों, तथा पाठ्य योजनादि का सम्यक् समालोचन पूर्वक आयुर्वेदाचार्य ( वैचलर आफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) चतुर्थ वर्ष परीक्षा, 1985 के सन्दर्भ में निम्नांकित संस्तुतियां की गई :—

(क) सैण्ट्रल कौंसिल के द्वारा प्रस्तावित एवं निर्धारित पाठ्यक्रम में प्रस्तुत विषय से सम्बन्धित ज्ञेयांश कुछ अंशों में व्यवस्थित प्रतीत नहीं होते हैं, तथा कतिपय उपयोगी महत्वपूर्ण एवं प्रमुख ज्ञेयांश भी समाविष्ट नहीं हो पाये हैं । जिनका कि अध्ययनाध्यापन नितान्त अपेक्षित है । इस संदर्भ में आवश्यक ज्ञेयांशों का संशोधन और परिवर्द्धन निम्नोक्त रूप से किये जाने की संस्तुतियां कीं :

तदनुसार समिति द्वारा प्रस्तावित एवं अपेक्षित रूप से निर्दिष्ट, संशोधित व परिवर्धित ज्ञेयांशों का समावेश पाठ्यक्रम में किये जाने हेतु विश्व-विद्यालय द्वारा भारतीय चिकित्सा केन्द्रीय परिपद को सानुरोध सूचित किया जाना परमावश्यक है ।

(1) सैण्ट्रल कौंसिल के (प्राप्त) पाठ्यक्रम पृष्ठ संख्या 41 पर अंकित "प्रसूतितन्त्रम् स्त्री रोगश्च" प्रथम पत्रम् के ज्ञेयांशों में निम्नांकित परिवर्द्धन किया जाना चाहिये ।

- (क) ज्ञेयांश संख्या 2 रजोविज्ञानीयम् में ऋतुमती के आगे ऋतुमती-चर्या, आर्तवचक्रम् और अंकित किया जाना चाहिए ।
- (ख) ज्ञेयांश संख्या 3 गर्भाविज्ञानीयम् में 'गर्भाधानं' के आगे गर्भावक्रान्ति तथा गर्भस्य आसनं के आगे अवतरणानि, उदयाश्च अपिच अपरानिमिति के आगे जरायु-गर्भोदकनाभिनालनां परिचयः और अंकित किया जाना चाहिए ।
- (ग) ज्ञेयांश संख्या 4 गर्भिणी विज्ञानीयम् में 'गर्भिणीलक्षणानि' के आगे गर्भविनिश्चयः गर्भिणी परीक्षणविधिः तथा 'गर्भिण्याः भासानुभासिकी परिचर्या' के आगे गर्भावस्थापक द्रव्याणि अपिच लीनगर्भः के आगे मृतगर्भः और अंकित किया जाना चाहिए ।
- (घ) ज्ञेयांश संख्या 5. 'सूतिका विज्ञानीयम्' शीर्षक के स्थान पर प्रजयिनी-सूतिका विज्ञानम् शीर्षक होना चाहिए 'सूतिका परीक्षापत्रकम् से पूर्व प्रजयिनी परीक्षा पत्रकम् और लिखा जाना चाहिए तथा 'परिचारिका' के आगे प्रसाविका अपिच 'जनन प्रक्रिया व्यवस्थाच' के आगे सुखप्रसवकरा उपामाः और अंकित किया जाना चाहिए ।
- (ङ) ज्ञेयांश संख्या 5. में यन्त्रशस्त्रचिकित्सा के गर्भशंकु निर्हरण प्रभृतयः के आगे जीवित निर्हरणम्, मृतगर्भ निर्हरणम्, मृतमातृ गर्भनिर्हरणम् तथा च हनुस्तम्भ प्रभृतयः के आगे काश्यपोक्ताः दुष्प्रजाताभयाः और अंकित किया जाना चाहिए ।

(2) सैण्ट्रल कौंसिल के पाठ्यक्रम पृष्ठांक 42 पर अंकित द्वितीय

पत्रम् के ज्ञेयांशों में निम्नांकित परिवर्धन/परिवर्तन किया जाना चाहिए ।

- (क) ज्ञेयांश संख्या 1. 'स्त्रीरोग विज्ञानीयम्' के आगे स्त्री शारीर वैशिष्ट्यम् स्त्रीत्वकराः पुस्त्व कराश्च भावाः स्त्रीरोगचिकित्सोपयोगि विविधान्तः स्त्रावाणं परिचयः और अंकित किया जाना चाहिए ।
- (ख) ज्ञेयांश संख्या 1. में 'योनिव्यापकरोगाः' शीर्षक के स्थान पर रजोव्यापकरोगाः शीर्षक होना चाहिए तथा इसमें 'रक्तप्रदरः के आगे अनार्तवः, नष्टार्तवः रजोनिवृत्ति कालीना उपद्रवाः अंकित करके शीर्षक समाप्त कर देना चाहिए, अथ च 'योनिव्यापक-

रोगाः” शीर्षक को इस प्रकार उपवर्धित किया जाकर लिखा जाना चाहिए, यथा विशतिः मोनिव्यापदः, जननागानी सहजाः विकाशः, वन्व्यात्वत-हेतु-लक्षण-परीक्षण चिकित्सा सहितम्, भगशोधः, भगकण्डुः, योनि-गर्भाशय श्लेयः, वीजवाहिनीशोधः, योनि-गर्भाशय अंशः, गर्भाशय स्थानायवृत्तिः योनिकन्दः, योग्यशः, सोमरोगः पूयमेंहः, फिरंगरेग्रउपदंशः, निरुद्धयोनिः ।

(ग) जेयांश संख्या 1. में निर्दिष्ट ‘स्तनरोगाः’ शीर्षक के आगे स्तन-शोध और लिखा जाना चाहिए ।

(घ) जेयांश संख्या 1. के निर्दिष्ट सामान्य स्त्रीरोगाः’ शीर्षक में ‘दुष्टार्तव प्रवृत्तयः के आगे पृष्ठ-कटि शूलम्, स्थोत्यम्, घोपा-पस्मारः और अंकित किया जाना चाहिए ।

(ङ) जेयांश संख्या 1. में “गर्भं गर्भप्रतिवन्धक चिकित्सा” शीर्षक में कृत्रिम गर्भपातः, तज्जनिताः व्यापतवः और संयुक्त किया जाना चाहिए ।

(च) इसी विषय के आलोच्यग्रन्थों में क्रम संख्या 6 पर प्रसूति विज्ञानम् वैद्य रमानाथ द्विवेदी और संयुक्त करना चाहिए ।

(3) सैण्ट्रल कौंसिल के पाठ्यक्रम पृष्ठ संख्या 42 पर अंकित “कौमार-मृत्यम्” के जेयांशों में निम्नांकित परिवर्धन किया जाना अपेक्षित है ।

(क) सात्री परीक्षा शीर्षक में ‘स्तन्य शोध न प्रकाराः’ के आगे स्तन्य वचनोपाया तथा “काश्यपसंहितायाः वेदनाध्यायः” शीर्षक के आगे बालरोग चिकित्सा सूत्रम्, औषध प्रदानपद्धतिः शीर्षक के आगे बालरोग चिकित्सा सूत्रम् औषध प्रदानपद्धतिः बालरोग प्रतिपेक्षोपायाः रोग प्रतिवन्धक चिकित्सा विषयश्च, और लिखा जाना चाहिए ।

(ख) “क्षीरकालीन व्याधिः” शीर्षक में—स्तनदोषः, ग्रहिपूतन कः, उत्फुल्लिका, कुक्कुरकासः, रोहिणी पश्चाद्रुजः, और संमुक्तर किये जाने चाहिये ।

(ग) “क्षीरान्नाद कालीन व्याधिः” शीर्षक के अन्त में गुदत्रंशः और संयुक्त किया जाना चाहिए ।

(घ) “अन्नाद कालीन व्याधिः” शीर्षक में मसूरिका मुदमुका रोमान्तिका रोगों को और संयुक्त किया जाना चाहिए ।

4. आयुर्वेद वाचस्पति (एम. डी. आयुर्वेद) परीक्षा सम्बन्धी प्रसूतितन्त्र, स्त्री रोग तथा कौमार भृत्य विषयक पाठ्यक्रम ( सैण्ट्रल कौंसिल से प्रस्तावित ) का अवलोकन कर प्रस्तुत पाठ्यक्रम को उक्त परीक्षा के लिये निर्धारित करने की संस्तुति की (परिशिष्ट I) ।

5. समिति ने पर्याप्त उद्घापोह एवं विचार विमर्श के उपरान्त निश्चय किया कि आयुर्वेद के प्रवर्तक महर्षिमहानुभावों ने अष्टांग आयुर्वेद के वर्गीकरण में कौमार भृत्य विषय को प्रमुख मानते हुए प्रसूतितन्त्र एवं स्त्री रोग विषय को कौमार भृत्य के उपांग के रूप में मान्य किया है अतः वर्तमान में आयुर्वेद क्षेत्र में प्रचलित तथा अध्ययनाध्यापन के लिए निर्धारित आयुर्वेदीय 12 (बारह) विभागों में इन विषयों से सम्बन्धित विभाग का नाम-करण कौमार भृत्य विभाग के रूप में प्रतिष्ठित किया जाना अधिक उपयुक्त प्रतीत होता है, एतदर्थ कौंसिल को विश्वविद्यालय द्वारा सूचित किया जाना चाहिये कि प्रस्तावित 12 विभागों में कौमार भृत्य प्रमुख विभाग के रूप में प्रतिष्ठापित रहे तथा प्रसूतितन्त्र एवं स्त्री रोग विज्ञान इसके उपांगों के रूप में रहें इस प्रकार शास्त्रीय परम्परागत अर्थ मान्यता के अनुरूप प्रसूतितन्त्र स्त्रीरोग एवं कौमारभृत्य के स्थान पर संवन्धि विषयों के विभाग नामकरण कौमार भृत्य विभाग किया जाना अधिक युक्तियुक्त सिद्ध होगा ।

6. समिति ने निश्चय किया कि-कौमार भृत्य-प्रसूतितन्त्र एवं स्त्रीरोग विषयों में स्नातकोत्तर प्रशिक्षण प्रारम्भ करने से पूर्व स्नातकोत्तर डिप्लोमा पाठ्यक्रम शीघ्र प्रारम्भ किया जाना चाहिए; एतदर्थ कौंसिल द्वारा प्रस्तावित पाठ्यक्रम में नामकरण, प्रसूतितन्त्र विषय के लिए डी.जी.ओ. आयुर्वेद (डिप्लोमा इन ऑब्स्टेटिक्स एण्ड गायनोकालांजी) तथा कौमार भृत्य विषय के लिए डी. सी. एच. (डिप्लोमा इन चिल्ड्रन डिजीजेज) कर दिया गया है, अतः समिति की राय में प्रस्तुत स्नातकोत्तर डिप्लोमा पाठ्यक्रम को यथा-शीघ्र प्रारम्भ किया जाना परमावश्यक है उक्त डिप्लोमा पाठ्यक्रम में बालिकाओं को मुख्य रूप से प्रविष्ट किया जाना चाहिए तथा प्रारम्भ में 5 छात्राओं को ही प्रवेश दिया जाना उचित होगा ।

7. सामाजिक आवश्यकताओं तथा उपयोगिताओं को ध्यान में रखते हुए आयुर्वेदीय स्नातक पाठ्यक्रम में न्यूनतम 20% बीस प्रतिशत स्थान बालिकाओं के प्रवेश के लिए सुरक्षित रखा जाना नितान्त आवश्यक है ।

8. वर्तमान समय कौंसिल द्वारा निर्धारित पाठ्यक्रम में निर्दिष्ट ज्ञेयों की परिपूर्णता की दृष्टि से पाठ्यक्रमानुसार सर्वांगीण पाठ्यग्रंथ उपलब्ध नहीं

होने से अध्ययन्तध्यापन में वड़ी कठिनाई उपस्थित होती है, तथा इस विषय के प्रायोगिक प्रशिक्षण के लिए भी कोई प्रयोगिक निर्देशिका पुस्तक भी प्राप्त नहीं है, अतः समिति का अनुग्रह है कि प्रसूतितन्त्र स्त्रीरोग एवं कौमार भृत्य विषय के सामयिक प्रामाणिक ग्रन्थों के निर्माण का कार्य तद्दिध विद्वान महानुभावों द्वारा विश्वविद्यालयीय स्तर पर उचित प्रोत्साहन देकर सम्यक करवाया जाना चाहिए ।

9. यह अनुभव किया जाता है कि महाविद्यालयों की वर्तमान प्रचलित व्यवस्था पद्धति में प्रसूतितन्त्र के प्रत्यक्ष कर्माभ्यास का समुचित प्रवन्ध नहीं हो पाया है, इस विषय की लोकोपयोगिता की दृष्टि से समिति के निम्न निर्दिष्ट सुभाव शीघ्र क्रियान्वयन हेतु प्रस्तुत है ।

1. महाविद्यालयों में अतिरिक्त बजट का प्रावधान रखते हुए आधुनिक सुविधा सम्पन्न प्रत्यक्ष कर्माभ्यास के लिए उपयुक्त प्रसवकक्षों "मैटरनिटी हास्पिटल्स" का निर्माण ।
2. तिलक आयुर्वेद महाविद्यालय, पूना तथा सेंट आयुर्वेदिक कालेज लखनऊ एवं अन्यात्य प्रसूति प्रायोगिक प्रशिक्षणोपयोगी प्रतिष्ठानों में सम्बन्धित विषय के प्रत्यक्षकर्माभ्यास हेतु छात्रों की शैक्षणिक यात्राओं की अनिवार्यता का पाठ्यक्रम में प्रावधान रखा जाना चाहिये ।
3. आयुर्वेद महाविद्यालयों में स्थायी रूप से माडलर्स की नियुक्ति करवाया जाना आवश्यक है, जिससे कि विविध प्रकार के प्रशिक्षणोपयोगी माडल्स का निर्माण करवाया जाकर छात्रों के प्रायोगिक ज्ञान को अधिक समृद्ध किया जा सके ।
4. समिति के सम्माननीय बाह्य सदस्य डा० श्रीमती शशि रमेश महोदया ने महत्वपूर्ण व्यावहारिक परामर्श दिया कि फिलहाल अन्य उपयुक्त व्यवस्था सम्पन्न होने तक आयुर्वेद कॉलेजों के समीपवर्ती मेडीकल कालेज या मैटरनिटी हास्पिटल्स आदि में छात्रों को भेजा जाकर प्रसूति-प्रत्यक्ष कर्माभ्यास प्रशिक्षण की व्यवस्था, राज्य सरकार के स्वास्थ्य चिकित्सा विभाग के आदेश से सम्पन्न करवाई जा सकती है, अथवा राज्यादेश से ही विज्ञ प्रसूति चिकित्सा विशेषज्ञों तद्विध महिला चिकित्सकों को पार्ट टाइम के रूप में प्रति नियुक्त करवाया जाकर प्रायोगिक प्रशिक्षण की सुविधा प्राप्त की जा सकती है, तथा उनके सहयोग

एवं पयप्रदर्शन से ही आयुर्वेद कालेजों के प्रसव कक्षों को भी समुन्नत व समृद्ध किया जाना उपयुक्त हो, जिससे कि कालान्तर में आयुर्वेद कालेज भी इस विषय के प्रशिक्षण की पर्याप्त साधन सुविधाओं से परिपूर्ण होकर स्वावलम्बी बन सकेंगे तथा सुयोग्य चिकित्सक तैयार कर सकेंगे। समिति ने इस सत्परामर्श की संस्तुति करके उक्त तथ्यों के क्रियान्वयन की कार्यवाही यथाशीघ्र प्रारम्भ किये जाने हेतु विश्वविद्यालय से नानुरोध आशा व्यक्त की है।

5. परीक्षाओं द्वारा प्रेषित रिपोर्ट्स के अनुसार महाविद्यालयों में आवश्यक सुधार करवाये जाने चाहिये।

(10) प्रचलित बालवर्ष में ही कौमारभृत्य विषय में एक वर्षीय स्नातकोत्तर डिप्लोमा कोर्स (आगामी सत्र से ही) प्रारम्भ कर दिया जाना चाहिए, जिससे कि परिवार कल्याण एवं बालकल्याण की दृष्टि से आयुर्वेदीय स्तर पर भी एक लोक कल्याणकारी समाज सेवा का प्रभास्त योगदान सिद्ध हो सके। इस पाठ्यक्रम के शुभारम्भ से उपयुक्त सुविधा रहेगी। समिति ने उक्त पाठ्यक्रम को शीघ्र प्रारम्भ करने के लिए प्रभावशील कार्यवाही करने की अपेक्षा की है।

सांयकाल 5 वजे सधन्यवाद सहित बैठक विरुजित की गई।

ह०/-

( वैद्य नरहरि शास्त्री )

संयोजक

## परिशिष्ट (I)

आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद प्रसूतितन्त्र स्त्रीरोगाश्च) परीक्षा, 1983  
खण्ड II उत्तरार्द्ध परीक्षा, 1983

प्रथमपत्रम् गर्भ-गर्भिणीशारीरम् होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

श्रोणिगुहा- योनि-स्त्रीशारीरवैशिष्ट्यम्, गर्भाशयरचनाशारीरं, आर्त-  
वम्, ऋतुचक्रम्, अतुयोगिनोऽङ्गरसाः, स्त्रीबीजम्, गर्भाधानम् गर्भाशयेतरगर्भावृत्तिम्,  
यन्मलादिः गर्भाः, गर्भोन्मादानानि, गर्भस्य षड्वात्वात्मकत्वम् । गर्भाम्निवृत्तिः,  
मातृजादयो भावाः, गर्भाम्निवृद्धिः, जननस्तराणां निर्माणम् जननस्तरैर्भाव्यवयवाना-  
मुदभवः, गर्भवर्त्तनं, गर्भवरा कला, जरावपराप्रभृत्यङ्गानां निर्माणं, तयोश्च कर्माणि ।  
गर्भस्य पोषणम् । गर्भशरीररचनाक्रिया—वैशिष्ट्यम् । गर्भलिङ्गोत्पत्तिः, गर्भनिदानम्,  
गर्भस्य मासानुमासिकी वृद्धिः गर्भगतस्थितिः, गर्भे वर्योत्पत्तिः ।

गर्भिण्यां गर्भकालीना विलक्षणता, सम्बद्धानि लक्षणानि, मातृगतांग-  
परिवर्तनलक्षणानि । हीनमव्यक्तमवलक्षणानि सापेक्षनिश्चितिश्च । गर्भायु-  
निरणयः, गर्भस्य जीवित-मृतावस्थानिरणयः, संख्यानिरणयः, गर्भिणी परिचर्या,  
त्वत्स्यवृत्तश्च, गर्भिण्याः मासानुमासिकं पथ्यापथ्यं च ।

द्वितीय पत्रम् प्रसूतितन्त्रम् होरात्रयम्, पूर्णांकाः 100 न्यूनतमोत्तीर्णांकाः 50

प्रसवस्य विविधावस्थाः, रक्तस्त्रावः, तन्निवन्तलं च । गर्भनिष्क्रमण-  
प्रकाराः गर्भस्य विविधा गतयः प्रकृतप्रसवोपक्रमाः—प्रसवस्य विविधावस्थानां  
कर्माणि—अपरापरीक्षणं, वैकृतः प्रसवः, योनिचंवरणादयः, मूढगर्भाः गर्भन्नावपातो,  
गर्भिणी व्यापदस्तच्चिकित्सा च ।

आयुर्वेदानुसारेण प्रसवोत्तरः क्रमः, सूतिकागारप्रवेशविधिः विभिन्नावस्था-  
नानुपक्रमाः, नात्सङ्घेदनं बालसंगोपनं बालोपचारश्च स्तन्यविकाराः ।

तृतीयपत्रम् स्त्रीरोगाः होरात्रयम् पूर्णांकाः 100 न्यूनतमोत्तीर्णांकाः 50

योनिव्यापदः स्तनरोगाः, सामान्यरोगाः, रक्तगुल्मः, स्तनाश्रितानि गर्भा-  
शयाश्रितानि चातुर्दानि, योनिप्रवाहः, औपसर्गिका योनिरोगा इति । स्त्रीजातानां  
रोगाणां निदानसम्प्राप्तिलक्षणपुरस्सरा, चिकित्सा । चिकित्सायां चीतरवस्तिः,  
पितुः, वर्तिः, लेपः, वृषणं, शार्दनं, वह्नं, इत्यादयः । गर्भनिरोधविधयः ।

चतुर्थपत्रम् प्रसूतिशल्यकर्माणि होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांकाः 50

सामान्यशल्यकर्म सिद्धान्तज्ञानम्, गर्भाशयमुखाविस्तृतीकरणं, गर्भाशय-

लेखनं, मुखादहनं, स्वस्थाने गर्भाशयस्वापनमर्शीनिर्हरणं, गर्भाशयानिर्हरणं रक्तगुल्म-  
निर्हरणं, शल्यनिर्हरणं, स्तनविद्र्वधिपाटनं गर्भाशयविदारः, उदरपाटनं, मूढगर्भनि-  
र्हरणं, गर्भपातनम् वन्ध्याकरम् इत्यादीनि एतदुपयोगियन्त्रशस्त्राणां शंक्वादीनां  
ज्ञानम् ।

आलोच्चप्रथा :—

1. चरकसुश्रुतवाग्भटादीनामुपयोगिनोभ्रशाः ।
2. Text Book of Obstetrics—Holland and Brouis Eden and Holleval
2. Text Book of Gynaecology—Jofcot. shaw.
4. Drill's oral Contraceptries.
5. Hunro Kirls oprative Obtetrics.
6. Embryology—Barth.



## ( परिशिष्ट X )

( संदर्भ मण्डल की संस्तुति संख्या (5) X )

दिनांक 27 अक्टूबर, 1979 को मध्याह्न 12.00 बजे राजस्थान विश्वविद्यालय सह-कुलपति सचिवालय, जयपुर में सम्पन्न हुई कार्य चिकित्सा विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की आयोजित बैठक का कार्यवाही विवरण :

## उपस्थित

1. श्री राम प्रकाश स्वामी, (संयोजक)
2. श्री शंकर लाल द्विवेदी
3. श्री ओम प्रकाश शर्मा  
(श्री यदुनन्दन उपाध्याय, वाराणसी, तथा श्री सी०पी० शुक्ला, जामनगर, अनुपस्थिति रहे)

1. राजस्थान विश्वविद्यालय की हैण्डबुक भाग 2 के परिनियम 42 एफ : 4 (1) प्रावधानान्तर्गत कार्य चिकित्सा विषय आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजनार्थ के लिए 3 वर्ष की कालावधि के लिए वैद्य राम प्रकाश स्वामी, सदस्य आयुर्वेद अध्ययन मण्डल, स्नातकोत्तर कार्य चिकित्सा विभागाध्यक्ष, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को संयोजक के पद पर नियुक्त किया गया ।
2. आयुर्वेद संकायान्तर्गत निम्नलिखित वर्षों की परीक्षाओं में निर्दिष्ट काय चिकित्सा विषय के पाठ्यक्रम तथा पाठ्यपुस्तकें, पाठ्य योजना, परीक्षा योजना को निर्धारित करने की मण्डल ने निम्नलिखित संस्तुति की ।  
(क) पंचम वर्ष आयुर्वेदाचार्य (वैचलर आफ आयुर्वेदिक मैडीसिन एण्ड सर्जरी) परीक्षा 1986 :  
(i) भारतीय चिकित्सा केन्द्रीय परिपद द्वारा उक्त विषय के लिए निर्धारित एवं मण्डल द्वारा अनुमोदित पाठ्यक्रम का समिति ने अवलोकन किया एवं इसमें निम्नलिखित संशोधन एवं परिवर्तन/परिवर्धन अपेक्षित है :—

1. प्रथम पत्र के ज्ञेयांश के अंतिम पंक्ति के अंतिम शब्द "चिकित्साया दोष दूष्यदेशादि विचारः" होना चाहिये ।
2. प्रथम पत्र के अंकों का विभाजन निम्न होना चाहिये, चिकित्सा = 75 योग. नैसर्गिके युनानी, सिद्ध चिकित्सा पद्धति परिचय = 25 अंक ।
3. द्वितीय पत्र के अंतिम पंक्ति में च ज्ञानम् शब्दों को निरस्त कर "आवस्थिक चिकित्सायाश्च ज्ञानम्" लिखा होना चाहिये ।
4. तृतीय पत्र में "ओजक्षयाः औजोभ्रंश, औजोव्यापद एतेषां मनोविकारेः सह सम्बन्धं" और बढ़ाना चाहिये ।
5. प्रश्न पत्र तृतीय में मानस रोग आव्ययिक चिकित्सा शीर्षक की अंतिम पंक्ति में "मनोविश्लेषण-सिद्धान्तानां प्रचलित मानसिक चिकित्सा विधानानां च परिज्ञानम्ः" शब्द जोड़ा जावे ।
6. तृतीय प्रश्नपत्र के अंकों का विभाजन इस प्रकार होगा ।  
चिकित्सा = 75 अंक तथा आत्ययिक रोग चिकित्सा = 25 अंक ।
7. काय चिकित्सा विषय के पत्रों का चतुर्थ एवं पंचम वर्ष में विभाजन करके तत्पत्रों की परीक्षा उसी वर्ष में होनी चाहिये ।
8. प्रथम, द्वितीय, तृतीय, चतुर्थ पत्रों व्याधियों के परीक्षाम तथा आतुर परीक्षणम का समावेश किया जाना चाहिये ।

(ख) आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद) खण्ड 2 (उत्तरार्द्ध) परीक्षा 1983

समिति ने भारतीय चिकित्सा केन्द्रीय परिषद् द्वारा निर्धारित पाठ्यक्रम परिशिष्ट (1) का अवलोकन करते हुये यह संस्तुति की कि

उक्त पाठ्यक्रम की रूपरेखा उचित है । इसे उक्त परीक्षा से स्वीकार किया जावे, व तब तक वर्तमान पाठ्यक्रम को चालू रखा जावे ।

अन्त में संयोजक महोदय के धन्यवादोपरान्त कार्यवाही समाप्त हुई ।

ह०/-

( वैद्य राम प्रकाश स्वामी )

संयोजक

## परिशिष्ट (1)

संदर्भ समिति की संस्तुति संख्या 2 (ख)

आयुर्वेद वाचस्पति (एम डी. आयुर्वेद काय चिकित्सा) परीक्षा खण्ड (2) उत्तरार्द्ध परीक्षा, 1983.

प्रथमपत्रम् निदानम् होरात्रयम् पूर्णांका 100 न्यूनतमोर्णांका 50

व्याधिविज्ञानोपायाः, निदानपंचकस्य सांगोपांगविवेचनम् । आयुर्वेदीय निदान पद्धतेर्वैशिष्ट्यं वैज्ञानिकता च । प्राचीननव्यनैदानिकपद्धतीनां तुलनात्मकः परिचयः । आयुर्निकप्रचलितानां रोगनिदानपद्धतीनां प्रयोक्तव्यसाधनानां यन्त्राणामुपकरणानां परिचयः प्रयोगविधेश्च परिवोधः । हृत्परीक्षणक्षकिरणादिविधीनां समग्रज्ञानम् ।

रोगि-रोगपरीक्षाविधिः, त्रिविधपंचक्रियपडविधाष्टविधदशविधानुरो रोगपरीक्षाविषयः ।

सांस्थानिकावयविकग्रोतोअनुसारि परीक्षाविधिः, आयुर्वेदोक्तनाडीपरीक्षा, रक्त-मूत्र-शुक्रणूतवन-ब्रह्मवारीत्येषां परीक्षाज्ञानं, रोगमार्गपरिज्ञानम् । प्रचलित-सुप्रसिद्दरोगाणां निदान-सम्प्राप्तिलक्षण-भेद-साध्यासाव्यज्ञानपुरस्सरं सापेक्षरोगविनिष्पद्यविवेकः ।

द्वितीय पत्रम् सामान्यचिकित्सा होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

समस्तरोगाणां चिकित्सासूत्राणि, त्रिव्याक्रमः, चिकित्सासिद्धान्त विवेश्च प्राच्य-नव्यमतयोः, आत्ययिक रोगाणां च चिकित्साक्रमः ।

तृतीयपत्रम् मानसरोगा रसायनवाजीकरणे च होरात्रयम् पूर्णांका 100 न्यूनतमोत्तीर्णांका 50

मानसरोगाणां चिकित्सा- सामान्यविशेषसिद्धान्ताः, सत्यवजयचिकित्सायाः वैशिष्ट्यं मानसरोगेषु प्रयुक्तौषधद्रव्यणां सम्यगवबोधः । मानक्षोपचारस्य विषयः प्राच्यमनव्यमतयोः, योगिकसमाधिपद्धतेर्वैशिष्ट्यं मानसरोगोपचार च तदुपयोगिता ।

रसायनतन्त्र परिचयः, रसायनसेवनविधीनां परिवोधः, रसायन जराव्यधि-प्रतिबंधकत्वं, वयः स्थापने जरानिराकरणे च प्रयुक्तानां विधीनां प्राच्य-नव्यमतानां परिज्ञानम्, नव्यजरातुरीयविज्ञानस्य परिचयः, विविधोषधद्रव्याणां कल्पास्तत्प्रयोगविधिज्ञानं च । आचाररसायनम् ।

वाजीकरणस्यादयत्वे महत्वं, वाजीकरणकर्मणः स्वरूपं, विभागाः, तदुपयोगिद्र व्यास्य च । क्लृप्तदयध्वजभंग-व्यवायशौष-शुकनाशादिरोगाणां निदान-सम्प्राप्ति-चिकित्सा-ज्ञानम्, क्लीनकरणविधयः ।

चतुर्थपत्रम् पंचकर्मचिकित्सा होरात्रयम् पूर्णांका 100 नूनतमोत्तीर्णांकाः 50 .

चिकित्सायां पट्कर्मणि, पंचकर्मणिच, शोधनीयानां पंचकर्मणां महत्त्वम्, पूर्वकर्मणोः स्नेहस्वेदयोः परिज्ञानं, पंचकर्मणां सैद्धान्तिकं व्यावहारिकं च परिज्ञानं, पंचकर्मणां प्रभावनिवेदन ?

संशोधनार्हं रोगिरोग विवेकः, संसर्जनक्रमः, पंचकर्मोपयोगी अग्नोपहरणीयद्रव्याणामुपकरणानां च परिज्ञानम् ।

आलोच्य ग्रन्था :

1. चरकसुश्रुत वाग्भटादीनामुपयोगितोत्रंशाः ।
2. माघवनिदान मधुकोशव्या पातहितम् ।
3. आयुर्वेदीय व्याधि विज्ञान—यादव जी ।
4. रोगीविरीक्षाविविः—आचार्य प्रियव्रत शर्मा ।
5. पंचकर्मविज्ञानम्—हरिदास श्रीवकस्तूरे ।
6. चिकित्सादर्श—पं० राजेश्वरदत्त शास्त्री ।
7. कायचिकित्सा—रामरक्ष पाठकः ।
8. चक्रदत्तः :
9. System of clinical medicine—Savill.
10. Muir's Text Book of Pathology.
11. Approved Laboratory Technic—Koliner.
12. Theory and practice of psychotherapy—Yellow.
13. Studies in Psychosomatic Medicine—Benedek.
14. Karnaj Bhava Yadhi Daivy Chikitsa—Pt. Kesav Dev Shastri.

## परिशिष्ट XI

( संदर्भ मण्डल की संस्तुति संख्या 5 (xi) )

दिनांक 27 अक्टूबर, 1979 को मध्यान्ह 12.00 बजे कुलपति सचिवालय विश्वविद्यालय, प्रांगण जयपुर में सम्पन्न शल्यतन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की बैठक का कार्यवाही विवरण :

## उपस्थित

1. वैद्य प्रभु दयाल पारीक (संयोजक)
2. वैद्य दीलत राम चतुर्वेदी
3. वैद्य मदन लाल शर्मा (अधिष्ठाता आयुर्वेद संकाय)

1. राजस्थान विश्वविद्यालय हैण्डबुक भाग 2 के परिनियम 42 एफ 4 : (1) के प्रावधानान्तर्गत शल्यतन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसन्धान समिति के संयोजनार्थ 3 वर्ष की कालावधि के लिए वैद्य प्रभु दयाल पारीक, सदस्य, आयुर्वेद अध्ययन मण्डल, सहायक प्रो० शल्यतन्त्र विभागाध्यक्ष, राष्ट्रीय आयुर्वेद संस्थान, जयपुर को संयोजक पद पर नियुक्त किया गया ।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित वर्षों की परीक्षाओं के लिए निर्धारित शल्यतन्त्र विषय के पाठ्यक्रम तथा पाठ्यपुस्तक, पाठ्य योजना, परीक्षा योजना का निर्धारण कर मण्डल को निम्नांकित संस्तुतियाँ की गईं ।

(क) पंचम वर्ष आयुर्वेदाचार्य (बैचलर आफ आयुर्वेदिक मेडिसीन एण्ड सर्जरी) परीक्षा 1985 :

(क) भारतीय चिकित्सा केन्द्रीय परिपद द्वारा निर्धारित एवं आयुर्वेद अध्ययन मण्डल द्वारा अनुमोदित शल्यतन्त्र विषय के पाठ्यक्रम को स्वीकार करते हुये निम्नलिखित आवश्यक परिवर्तन/परिवर्तन अपेक्षित है :

1. शल्यतन्त्र के प्रथम पत्र को दो भागों क, ख में विभाजित किया जावे । 'क' भाग में 'शल्यतंत्रस्य उत्पत्ति' से लेकर 'अमृतजलादिनूचीभरणम् रक्तदानम्' शब्द तक 7 पैरों के जेयांशों का समावेश किया जावे । यह खण्ड क 50 अंक का होना चाहिये । खण्ड 'ख' के अन्तर्गत चिकित्सा शीर्षक में निर्दिष्ट समस्त जेयांशों का निर्धारण होने चाहिये ।

खण्ड 'ख' भी 50 अंक का होगा प्रत्येक न्यूनतमोत्तीर्णांक अंक 50 दोनों खण्डों को मिलाकर ही होगा।

2. द्वितीय पत्र में निर्धारित जेयोंको दो खण्डों के एवं ख में विभाजित होना चाहिये। खण्ड क में "अर्बुद ग्रन्थि मे लेकर उदार विकाराः" शीर्षक में निर्धारित जेयों तक के पाठ्यांश समाविष्ट किये जाने चाहिये। जिसके 50 अंक निर्धारित हैं और "आमाशय विकाराः शीर्षक से अन्तवृद्धि किवकाराः शीर्षक में निर्धारित जेयों का निर्धारण खण्ड ख में किया जाना चाहिए जिसके भी 50-50 अंक निर्धारित हैं प्रत्येक न्यूनतमोत्तीर्णांका संयुक्त रूप में 50 ही होंगे।

3. शल्यतन्त्र में निर्धारित दो सैद्धान्तिक पत्रों एवं प्रायोगिक की परीक्षाओं को अन्तिम वर्ष में नहीं करवा कर निम्न प्रकार से कारवाई जानी चाहिये जिससे कि छात्रों पर अव्यापन का अविक भार नहीं पड़े। "प्रथम पत्र की परीक्षा चतुर्थ वर्ष की परीक्षा के साथ तथा दूसरे पत्र एवं प्रायोगिक की परीक्षा पंचम वर्ष के साथ करवाई जाय।

4. आलोच्यग्रन्था शीर्षक के अन्तर्गत निम्नलिखित पंक्ति का समावेश किया जाना चाहिये। शल्यतन्त्र विज्ञान भाग(1) एवं (2) में डा० सुरेन्द्र कुमार शर्मा, राजकीय महा-विद्यालय, पटियाला।

(ख) आयुर्वेद वाचस्पति एम.डी. आयुर्वेद खण्ड 2 (उत्तरार्द्ध) परीक्षा 1983

भारतीय चिकित्सा केन्द्रीय परिषद द्वारा उपरोक्त परीक्षा हेतु निर्धारित पाठ्यांश [परिशिष्ट (1)] को समिति ने स्वीकार करने की संस्तुति करने के साथ ही समिति ने इसे आवश्यक माना कि प्रायोगिक में इस बात का प्रमाणपत्र होना आवश्यक है कि परीक्षार्थी ने अपने अध्ययन काल में क्लास में 5-5 संक्रमण एवं असंक्रमण शालाकर्म स्वयं द्वारा किये हैं। इनके अतिरिक्त कम से कम 10 शल्य-कर्मों में सहायक के रूप में कार्य किया है, तथा योग्य सम्पन्न है, प्रायोगिक मौखिक में छात्रों द्वारा आर्यशास्त्रीयानुकूल उदहरणों का आवृत्तिक विज्ञान से समन्वयात्मक अनुपस्थापन एवं प्रतिपादन आवश्यक हो।

(2) शल्यतन्त्र विषय महानिबन्ध को छात्रों द्वारा तथ्यों के साथ संकलन भाग होना मात्र पर्याप्त नहीं है इसमें छात्र द्वारा कुछ न कुछ भौतिक सूक्ष्म का उस विषय में अनुसंधानात्मक व्यावहारिक पक्ष सहित तथ्यपूर्ण उल्लेख होना चाहिये ।

अन्त में संयोजक महोदय को धन्यवाद के साथ संकाय की बैठक समाप्त हुई ।

ह/०

(वैद्य प्रभु दयाल शास्त्री)

संयोजक



(परिशिष्ट ( )

( संदर्भ समिति की नि० संख्या 2 (ब)(1) )

आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद शल्यतन्त्र) परीक्षा, 1983

खण्ड 11 उत्तरार्द्ध परीक्षा 1983

प्रथम पत्रम् — शल्यतन्त्र सिद्धान्ता.

होरावयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

शल्यतन्त्रस्यायुर्वेदे प्राधान्यम्, तस्यैतिहासिकोत्कर्षिकयोः, शल्यतन्त्रस्य प्राचीनसंहिताः आचार्यादिच, नव्यशल्यतन्त्रपरिचयः ऐतिहासः

मुश्रुतमुखेन दोषवानुमलविवेकः, रक्तस्य वैशिष्ट्यं चतुर्थदोषत्व-प्रतिपादनं च वृत्तानीयतन्मीक्षणपुरःसरम् पट् क्रियाकालाः सर्वत्रोतः परीक्षणं, शल्यतन्त्रे नर्सर्णमहत्त्वं परीक्षणं च, शल्यतन्त्रोपदिष्टानां व्याधीनां हेतुसंप्राप्ति-विवेचनम् ।

द्वितीय पत्रम् — शल्यकर्म (साधारण)

होरावयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकः 50

शास्त्रसाध्या व्यावयः, तेषां चिकित्साक्रमः प्राच्यनव्यमतयोः । स्नेह-स्वेदादि पूर्वकर्म अग्नोपहरणीयानि, प्रवानकर्मणि संज्ञानाद्यज्ञानम् तदुपयोगि-द्रव्यपरिचयश्च, द्विविध रोगेष्वष्ट विधशल्यकर्मणां प्रयोजनानम् । शस्त्राणां दोषगुणाः, यन्त्रशस्त्रोपकरणान्त्रां परिज्ञानम्, ब्रणवन्वनविवयः । पश्चात्तकर्म ज्ञानम्, पथ्यापययम् ।

तृतीय पत्रम् — योग्या (प्रायोगिकं व्यावहारिकं च शास्त्रकर्म)

होरावयम् पूर्णांकः 100

न्यूनतमोत्तीर्णांकाः 50

शल्यकर्मन्यासः तदर्थं विविप्रतिष्ठतीनां संरचना, शास्त्रोपदिष्टयोग्या निर्देशः प्राच्यनव्यमतयोः विविधरोगेषु निदिष्टानां शल्यकर्मणां विचदं ज्ञानम् । विधेयतो नृवृद्धि-अवृद्धि-अपमरी-अर्शोमगन्दर प्रभृत्युपयुक्तानां कुक्षिपाटन-वमनी-दन्वनादीनांच कृते शुनैर मानवशदानाचोपरि सततान्यासः ।

चतुर्थ पत्रम् — अनुशल्यकर्म

होरावयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

क्षारतन्त्रपरिचयः, क्षारनिर्माणविधिः तदुपयोगिद्रव्याणांच, परिचयः, क्षारस्य व्याधिषु विविदिपेक्षो, क्षारसूत्रनिर्माणम् भगन्दरेषु अर्थः सु क्षारसूत्र-

प्रयोगविधिः । अग्निकर्म तत्प्रयोगज्ञानं च । रक्तमोक्षणस्य विविधोपायानां  
सिराव्यघ-जलीगालासु-शृङ्गादीनां परिचयः प्रयोगज्ञानं च ।

आलोच्यग्रन्था :—

1. सुश्रुतसंहिताया उपयोगिनी अंशाः ।
2. Bailey & Love's Short Practice of Surgery.
3. Scientific Basis of Surgery—Irvine
4. Methods of Surgical Research—K.M. Udupa.
5. Text Book of Operative Surgery—Forguharsch.

## (परिशिष्ट XII)

दिनांक 27 अक्टूबर, 1979 को मध्याह्न 12.00 बजे कुलपति सचिवालय, विश्वविद्यालय प्रांगण में शालाक्य तन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति की आयोजित बैठक का कार्यवाही विवरण ।

## उपस्थित

1. वैद्य मदन कुमार शर्मा, (संयोजक)
2. ,, श्री श्रीकृष्ण शर्मा,
1. ,, बृज मोहन वर्मा,

1. राजस्थान विश्वविद्यालय की हैण्ड बुक भाग 2 के परिनियम 42 एफ. 4 (1) के प्रावधानान्तर्गत शालाक्य तन्त्र विषयक आयुर्वेदीय शिक्षण एवं अनुसंधान समिति के संयोजक पद के लिए सर्वसम्मति से श्री वैद्य मदन कुमार शर्मा, सदस्य आयुर्वेद अध्ययन मण्डल, शालाक्यतंत्र विभागाध्यक्ष, म. मो. मा. राजकीय महा-विद्यालय, उदयपुर के 3 वर्ष की कालावधि के लिए संयोजक नियुक्त किया गया है ।

2. आयुर्वेद संकायान्तर्गत निम्नलिखित अंकित वर्षों की परीक्षा में निर्दिष्ट शालाक्य तंत्र विषय के पाठ्यक्रम, पाठ्यपुस्तक, पाठ्ययोजना एवं परीक्षा-योजना को निर्धारित करने की मण्डल को निम्नलिखित संस्तुतियां की गईं । पंचम वर्ष आयुर्वेदाचार्य (बैचलर आफ आयुर्वेदिक मेडीसिन एण्ड सर्जरी) परीक्षा ।

(क) नेत्ररोगा शीर्षक के अन्तर्गत निम्नलिखित परिवर्धन अपेक्षित है ।

1. क्रमांक 1 पर सन्धिगत रोगा में निर्दिष्ट स्त्रावाः ज्ञेयांश को उपनाहः के पश्चात् आधुनिकोक्त अजु-यन्त्र सम्बन्धित रोग आश्रव के रूप में लिखा जावे ।
2. क्रमांक 2 अतरमगत रोगाः के साथ श्लेष्मावरण रोगा और जोड़ा जावे ।
3. क्रमांक 4 पर कृष्णगत रोगाः के साथ "स्वच्छ-मण्डलप्रदाहः" तथा अजकाजयत् के साथ "अक्षि-पाकात्ययः" जोड़ा जावे ।

4. क्रमांक 5 की प्रथम पंक्ति में अनयोः संप्राप्ति शब्द के बाद 'भेदाः लक्षणानि चिकित्सा च' और जोड़ा जावे ।
5. क्रमांक 6 की दूसरी पंक्ति में पित्तविदग्ध दृष्टि शब्द के पूर्व 'पूर्वश्लेष्म विदग्ध दृष्टिः' जोड़ा जावे । तथा तिसरी पंक्ति में लक्षणानि चिकित्सा च शब्द के बाद एवं क्रियाकल्प शब्द के पूर्व "व्यावसायिक दृष्टयः चक्षुः स्वास्थ्य रक्षोपायः चक्षुः परीक्षा च सन्निकृष्ट दृष्टि विप्रकृष्ट दृष्टि, विषम जरादृष्टि प्रभृतिषु दृष्टि, रोगेषु नेत्र परीक्षणं उपनेत्र व्यवस्था च, क्षतनेत्र चिकित्साविधि, दृष्टिनाडी दृष्टि निकेः तानाश्रया रोगाः, तार मण्डल, संधान मण्डल, कर्बुर वृत्तेः रोगाः लक्षणानि चिकित्सा च, लिखा जावे ।
6. पृष्ठ संख्या 50 द्वितीय पत्र में शिरोरोगाः शीर्षक के अन्तर्गत शिरसः महत्त्वम् शब्द के पूर्व में "शिरोग्रहा परिचयः" संयुक्त किया जावे । इस ही शीर्षक के अन्तर्गत पंक्ति संख्या 3 में अरुपिकः शब्द के बाद "शिरोद्व्यतिः सापेक्ष निदानम्" लिखा जावे । उक्त शीर्षक में भी पंक्ति संख्या 4 में शिरोवस्ति के बाद "विविधाः लेपाः" संयुक्त किया जावे ।
7. पृष्ठ संख्या 50 पर ही कर्ण रोगाः शीर्षक के अन्तर्गत इस शीर्षक की प्रथम पंक्ति में कर्णशारीर ज्ञानं के बाद "कर्ण परीक्षा" लिखा जावे । इस ही शीर्षक की तृतीय पंक्ति में कर्णप्रतीनाह शब्द के बाद "मध्यकर्ण शोधः कर्णवाह्यर्यम्, कारणानि" लिखा जावे ।
8. पृष्ठ संख्या 50 पर ही नासारोगाः शीर्षक के अन्तर्गत नासाशारीर ज्ञानं शब्द के पश्चात् "नासा-परीक्षा" लिखा जावे ।

9. पृष्ठ संख्या 51 पर मुखारोगाः शीर्षक के अन्तर्गत प्रथम पंक्ति में ओष्ठरोगाः शब्द अशुद्ध प्रतीत होता है इसके स्थान पर “मुखारोगा” शब्द होना चाहिये ।
10. पृष्ठ संख्या 51 पर ही दन्त मूलगत रोगाः शीर्षक के अन्तर्गत प्रथम पंक्ति के प्रारम्भ में ही संख्या शब्द से पूर्व “दन्तशारीरम्” लिखा जावे । इस ही शीर्षक में द्वितीय पंक्ति में दन्तमडी शब्द के बाद “कृमिदन्त” लिखा जावे तथा लक्षणाने चिकित्सा च शब्दों के बाद “दन्तकोतर पूरणविविः कृत्रिम दन्तावलि निर्माण परिज्ञानश्च” लिखा जावे ।
11. पृष्ठ संख्या 51 पर ही कण्ठगत रोगाः शीर्षकान्तर्गत द्वितीय पंक्ति के बाद “गलादुर्दं स्वरभ्रंशः” लिखा जावे ।
12. आलोच्य अन्य शीर्षकायान्तर्गत निम्नलिखित 6,7, 8 पर निम्न पुस्तकों का समावेश किया जावे ।

6. आई डिजीज—पारशान
7. आई डिजीज—ललित के० अग्रवाल
8. ओपरेटिव डेन्टेस्ट्री—डा० आर० अहम्मद

(ख) आयुर्वेद वाचस्पति (एम०डी० आयुर्वेद—) परीक्षा

भारतीय चिकित्सा केन्द्रीय परिषद द्वारा निर्धारित पाठ्यक्रम को निम्नलिखित परीक्षाओं के लिये स्वीकार करने की संस्तुति की :—

( i ) खण्ड ( ii ) उत्तरार्द्ध परीक्षा, 1983 (परिशिष्ट ( i ) )

अन्त में संयोजक महोदय को सवन्धवाद के साथ संकाय की बैठक समाप्त हुई ।

ह०/-

( वैद्य मदन कुमार शर्मा )  
संयोजक

(परिशिष्ट 1)

( संदर्भ समिति की सं० सं० 2 (ख) )

आयुर्वेद वाचस्पति (एम० डी० आयुर्वेद शालाक्यतन्त्र) परीक्षा, 1983  
खण्ड 11 उत्तराद्ध परीक्षा, 1983

प्रथम पत्रम्—उध्वनिशारीरम्

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

शिरस उत्तमांगत्वम्, शिरःशारीरम् । नेत्ररचनाशारीरम् मण्डलानि,  
पटलानि, सन्धयश्च । नासा-कर्ण-जिह्वा-दन्त-ओष्ठादीनां रचना-शारीरम् ।  
प्राचीनानां शालाक्याचार्याणां तत्संहितानां च परिचयः ।

द्वितीय पत्रम्—नेत्ररोगचिकित्सा

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

नेत्ररोगाणां निदानं, नव्यनिदाने पकरणानाञ्च परिचयः, सन्धिवर्त्म-  
शुक्ल-कृष्ण-दृष्टि-सर्वगतानां रोगाणां नामानि, हेतवः, संप्राप्तिः, लिंगानि  
चिकित्सा च ।

तृतीय पत्रम्—अन्योऽन्यंगरोगचिकित्सा

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

शिरः-कर्ण-नासा-मुख-ओष्ठ-जिह्वा-तालु-कण्ठगतानां रोगाणां नामानि,  
निदानं चिकित्सा च । नव्यनिदानोपकरणविधीनां च परिज्ञानम् ।

चतुर्थ पत्रम्—शालाक्यचिकित्साकर्म

होरात्रयम् पूर्णांकाः 100

न्यूनतमोत्तीर्णांकाः 50

उपयुक्तेषु रोगेषु प्रयुज्यमानानां क्रियाकल्पातां आश्च्योतनविडालक-  
पुटपाक-तर्पण-अंजन-घूमपान-कवल-गण्डूप-रक्तमोक्षण-नस्य-शिरोवस्ति-इत्यादीनां  
निर्माण-प्रयोगविधिज्ञानम् ।

शालाक्यरोगेषु प्रयुज्यमानानां शलाकादीनां नव्ययन्त्राणां च परिचयः  
प्रयोगज्ञानपुरः सरः ।

आलोच्यग्रंथाः—

1. चरकसुश्रुतवाग्भटादीनामुपयोगिनो अंशाः ।
2. System of ophthalmology—Duke & Elder.
3. Disease of nose, Throat & Ear—Ballenger.

## परिशिष्ट XI

( संदर्भ मण्डल की संस्तुति संख्या 6 )

Provisions existed under heading 'Ayurveda Brhaspati Examination' in Chapter xxxix-Examinations-Faculty of Ayurveda be substituted with the following. This will come into force w.e.f. July, 1980.

**Ordinances, Scheme of Examination, Minimum Standards and Curriculum for Post-Graduate Education in Ayurveda.**

AYURVEDAVACHASPATI M.D. AYURVEDA (.....)

O. 329 N-20 :

The aim of the Post-graduate course shall be the orientation in specialities and to produce specialities who can be efficient teachers, clinicians, pharmaceutical experts and research workers in the respective fields of Ayurveda.

O. 329 N-21 :

There will be two academic sessions in a year (i) July to June and (ii) January to December. The candidates will be admitted to Ayurvedavachaspati M.D. Ayurveda ( ..... ) course in the month of July and January respectively.

O. 329 N-22 :

The courses of study for the Post-graduate degree 'Ayurvedavachaspati M.D. Ayurveda ( ..... )' Examination shall be of three years duration having two examinations as follows, each of which will be held twice a year in the month of June and December :—

- (i) Part-I ( Preliminary ) Examination at the end of one academic year, after admission.
- (ii) Part-II ( Final ) Examination at the end of the two academic years, after passing the Part-I ( Preliminary ) examination.

O. 329 N-23 :

The University shall grant the post-graduate degree of Ayurvedavachaspati M.D. Ayurveda ( ..... ) in the following branches of specialities and a candidate shall be required to offer any one of these branches of specialities for study to secure post-graduate degree :—

*Degree :*

Ayurvedavachaspati M.D. Ayurveda ( .. ..... )  
name of the branch

**Branches of Specialities :**

1. Samhitas.
2. Ayurveda Sidhanta and Darshan.
3. Sharira rachana.
4. Sharirkriya.
5. Dravyagunavigyan.
6. Rasashastra and Bhaishajyakalpana.
7. Prasuti-tantra and Stiroga.
8. Kaumarbhritya.
9. Kayachikitsa.
10. Vikritivigyan.
11. Manovigyan and Manasroga.
12. Shalya tantra.
13. Shalakyatantra.

**O. 329 N-24 :**

There shall be following five papers for Ayurvedavachaspati M.D. Ayurveda Part-I (Preliminary) examination each of three hours duration and containing oral/practical examinations :

- |           |   |
|-----------|---|
| Paper I   | (a) Ayurveda-itihas.<br>(b) Methods of research and Statistics. |
| Paper II  | Sharira.  |
| Paper III | Dravyaguna and Rasashastra.                                     |
| Paper IV  | Nidana.   |
| Paper V   | Chikitsa.   |

Emphasis will be given on practical and applied aspects of the subject.

**O. 329 N-25 :****I-Elligibility for admission to Part I**

A candidate who after obtaining Ayurvedacharya/Ayurveda-charya ( Bachellor of Ayurvedic Medicine and Surgery ) degree of the University or any other degree recognised by the University as equivalent there to with a minimum of 50% marks in the subjects in which he wants specialisation and 50% marks in the aggregate and has completed a regular course of study for one academic year after full registration i.e. he must have completed satisfactorily six months of compulsory rotating internship and must subsequently have done one year house job at an affiliated Ayurvedic College and Hospital shall be eligible for admission to the Ayurveda-vachaspati M.D. Ayurveda Part I ( Preliminary ) Examination.

**II-Selection of Candidates**

The selection of candidates would be done by a selection committee consisting of the Head of the Institution and the various



guides in the subject/branch of speciality concerned. There shall be an interview test of the candidates and admissions will be held strictly in order of merit taking into account the marks obtained in professional examination, and in the subject concerned in which post-graduate course is to be conducted as well as performance during housemanship and interview test.

### III-Previso for failiure Candidates

A candidate failing in any one paper at the Ayurveda-vachaspati M.D. Ayurveda Part-I ( Preliminary ) Examination shall be allowed to clear the same in not more than three a tempts at the subsequent examination. However he may be allowed provisionally to keep terms with the Ayurvedavachaspati M.D. Ayurveda Part-II (Final) Class and like other candidates he may be allowed to get the subject of thesis registered. In case such a candidate fails to clear the failing subject in three subsequent attempts i.e. at the immediately following three exam. his provisional permission to join the part II class shall be withdrawn and the subject of thesis cancelled.

- Notes :—1. Non-appearance at an examination shall be counted as an attempt.
2. A candidate failing in more than one subject at the Ayurvedavachaspati M. D. Ayurveda Part I (Preliminary) Examination need not required to appear at the subsequent examination in the subject/subjects he has already cleared, but he will not be permitted to keep term with part II class till he passes all the subjects prescribed for the Part-I Examination.
3. Candidates failing at the Part-I examination in three consecutive attempts shall not be allowed to rejoin the course.

O. 329 N-26. :

### I—Eligibility for admission to Part II

- (a) Ayurvedavachaspati M. D. Ayurveda Part II (Final) examination shall consist of thesis, theory papers practicals/clinical examination, viva-voce and record of work. To seek admission to Ayurvedavachaspati M.D. Ayurveda Part II (Final) Examination a candidate must have passed Ayurvedavachaspati M.D. Ayurveda Part I (prliminary) examination of this University.
- (b) No candidate shall be allowed to appear in written examination and Practical tests unless the thesis is approved for the purpose.

- (c) Teachers having atleast three years teaching experience in an affiliated Ayurvedic College including one year of house job may be exempted from Part I (Preliminary) examination, consequently they may be admitted directly to the Part II ( Final ) examination subject to fulfilment of the condition of aforesaid para (b).

## II—Supplementary Examination

- (a) There will be no provision of supplementary examination for a candidate failing at the Ayurvedavachaspati M.D. Ayurveda Part II (Final) examination even in one theory paper/practical test.
- (b) Candidates failing even in one theory paper/practical/clinical test/viva-voce shall be deemed to have failed in all the papers, such candidates may reappear at the subsiquent examination as Ex-Student but they will have to appear in all the theory papers and practical test, without requiring to submit a fresh thesis.

## III—Method of training

Candidates will be given intensive training in classical knowledge alongwith comparative and critical study of subject. They are required to know about the methods and technique of research work done in the respective fields and take part in seminars, group discussions, clinical meetings etc.

During the preliminary course hospital training will be imparted to all the candidates. The candidates are required to participate in the teaching and training programme of under-graduate students or interns in their subject.

### O. 329 N-27 :

#### I—Establishment of post-graduate course :

A post-graduate course should be started only in a place where under-graduate coures already exists. No affiliation shall be given only to run post-graduate courses.

#### II—Medium of Training

The medium of post-graduate education on Ayurveda shall be Sanskrit

#### III—Branches of Speciality and Papers

- (a) There shall be four papers in addition to one practical/clinical and viva voce and thesis in each branch of speciality each of three hrs duration.

(b) The following papers have been prescribed under each branch of speciality for Ayurvedavachaspati M. D. Ayurveda Part II (Final) Examination :

1. Samhitass :

- Paper 1. Charak Samhita with available Sanskrit commentaries.
- Paper 2. Sushrut Samhita with available Sanskrit commentaries.
- Paper 3. Ashtanga Sangraha with available Sanskrit commentaries.
- Paper 4. Ayurvedetihasa.

2. Ayurveda Sidhanta and Darshan :

- Paper 1. Padarthavigyana.
- Paper 2. Adharbhuta Darshana.
- Paper 3. Manovigyana Chaikitsa
- Paper 4. Adharbhuta Sidhanta.

3. Sharira Rachana :

- Paper 1. Garbha Sharira
- Paper 2. Sandhyasnimarma Sharira
- Paper 3. Kosthanga Sharira
- Paper 4. Siradhamanisrotah Sharira

4. Sharira Kriya :

- Paper 1. Dashdhatumala Vidyana
- Paper 2. Prakritisatvasaradi Vidyana
- Paper 3. Koshtanga Kriya Sharira
- Paper 4. Prayogika Kriya Sharira

5. Dravyaguna :

- Paper 1. Namarupa vidyana
- Paper 2. Gunakarma vidyana
- Paper 3. Prayoga vidyana
- Paper 4. Aushadhyoga vidyana

6. Rasashastra and Bhaishajyakalpana :

- Paper 1. Dravya Parichaya
- Paper 2. Rasashastra
- Paper 3. Bhaishajyakalpana
- Paper 4. Aushadhyoga vidyana

**7. Kayachikitsa :**

- Paper 1. Nidana
- Paper 2. Samanyachikitsa
- Paper 3. Manasroga, Rasayan, Vajikarna
- Paper 4. Panchkarma chikitsa

**8. Prasutitantra Striroga :**

- Paper 1. Garbh-garbhini-sharira
- Paper 2. Prasuti tantra
- Paper 3. Striroga
- Paper 4. Prasav shalyakarma

**9. Kaumaryabhritya :**

- Paper 1. Garbhapokrama
- Paper 2. Kaumaryabhritya
- Paper 3. Bairoga
- Paper 4. Samanyachikitsa

**10. Vikritivigyana**

- Paper 1.
- Paper 2.
- Paper 3. Nomenclatures to be obtained
- Paper 4. from C.C.I.M.

**11. Manovigya and Manasroga**

- Paper 1.
- Paper 2. Nomenclatures to be obtained from
- Paper 3. C.C.I.M.
- Paper 4.

**12. Shalyatantra :**

- Paper 1. Shalyatantra (Sidhanta)
- Paper 2. Shalyakarma
- Paper 3. Yoga (Prayogika shalyakarma)
- Paper 4. Anushalyakarma (kshara, agni, siravedha etc.)

**13. Shalakyatantra :**

- Paper 1. Urdhavanga sharira
- Paper 2. Netrayoga chikitsa
- Paper 3. Anya urdhvangarogachikitsa
- Paper 4. Shalakya chikitsa karma

## परिशिष्ट XIV

( संदर्भ मण्डल की संस्तुति संख्या (8) )

प्रथम पत्र—सामान्य स्वास्थ्य एवं गृह चिकित्सा विज्ञान :

स्वस्थ एवं अस्वस्थ की परिभाषा, स्वास्थ्य का विधान, सामान्य दिनचर्या, दन्तवादन, जिह्वानिलेवन, अञ्जन आदि के गुण, व्यायाम से लाभ, शिरोढम्यङ्ग के गुण, स्नान की आवश्यकता एवं गुण, स्नान के प्रकार, स्नान निषेध, स्वच्छ वस्त्र धारण के फल आहार के सामान्य गुण, भोजन के काल, भोजन परीक्षण में चिकित्सक का महत्व, भोजन के हीन, मिथ्या एवं अतियोग के दोष, भोजन के बाद व्यायाम से हानि, दूग्ध, तक्र(छाछ), नवनीत (मक्खन, घृत, शाक, फल, कन्द, मवु, इक्षु आदि के गुण, मद्य के गुण एवं विकार, शीलचर्या, निद्रा के गुण निद्रा न लेने पर हानि, निद्रानाश के कारण, रात्रि के अन्त में जलपान के गुण, विवाह की आयु, ब्रह्मचर्य के गुण, अतिमैथुन से हानि, ऋतुचर्या, 6 ऋतुओं के प्रकार एवं संक्षिप्तचर्या, ऋतुसंघि में होने वाले रोग, गृहनिर्माण योग्य एवं अयोग्य भूमि, अच्छेनिवास के लक्षण, नगर एवं विद्यालय की स्थिति संक्रामक रोग एवं संक्रमण से बचने के उपाय, महामारी जन-पत्रोर्व्स के कारण एवं बचने के उपाय, पांच भौतिक अशुद्धियाँ (पृथ्वी, जल, तन्त्र, वायु और आकाश और उनके शुद्धिक्रम, हितोपदेश )। 50 अंक

सद्वृत्त चिकित्सा की परिभाषा, चिकित्सा के प्रकार, श्रोत्रों की सामान्य निदान व आयुर्वेदिक घरेलू औषधियों से चिकित्सा मथा, शिरदर्द सूर्यवर्त्त, जुकाम (प्रतिश्याय), मानसिक दुर्बलता, बालों का पकना, नेत्रों की पीड़ा, कान का पकना, नाक की दुर्गंधि, दन्तशूल मुख के छाले, मुख की दुर्गंध, गला बैठना, खांसी (कप्स) दमा (श्वास), हृदय की दुर्बलता, अजीर्ण, उदरशूल (पेट का दर्द) उल्टी होना (वमन रोग), हिचकी, हैजा. पाण्डुरोग, विबंध (कब्जी रहना), अतिसार (दस्त लगना), अक्ष्मरी (पथरी रोग), अर्श (बवासीर) मूत्र का अवरोध, ग्रामवात (गठिया वायु). रक्त विकार, दाद, खुजली, दुखार (ज्वर), स्वपन दोष, श्वेतप्रदर, सर्प, विच्छु आदि के विष का प्रतिरोधी उपाय, सफेद दाद (श्वित्रकुष्ठ) आन्त्रिक ज्वर, विषम ज्वर (मलेरिया), ममूरिका (चेचक) रोमान्तिका, गलरोहिणी, श्वसनक ज्वर फ्रिड्ग उपदेश, पूयमेह, राजयक्ष्मा आदि रोगों का ज्ञान प्रतिषेध एवं प्रतिकार. रोगक्षमता परिज्ञान, वैक्सीन, सीरम, का व्यावहारिक प्रयोग ।

पाठ्यग्रन्थ :—1. स्वस्थ वृत्त समुच्चय

2. देहाती प्राकृति चिकित्सा

आलोच्च ग्रन्थ :

नव्य जन स्वास्थ्य एव स्वास्थ्य विज्ञान

द्वितीय पत्र — योग एवं प्राकृतिक चिकित्सा

पूर्णांका 100

35 अंका

योग की परिभाषा, योग का महत्व एवं आरोग्य से सम्बन्ध, योग के मूलभूत सिद्धान्तों का सामान्य परिचय, योगासनों का सामान्य परिचय तथा आसन करने से पूर्व सावधानी, पद्मासन, जानुशीर्षासन, अर्द्ध मत्स्येन्द्रासन, पश्चिमोन्तानासन, गर्भासन, धनुरासन, सर्वाङ्गासन, मयूरासन, हलासन, आसन सम्राट शीर्षासन, श्रवासन आदि प्रमुख आसनों का स्वास्थ्य एवं चिकित्सा की दृष्टि से महत्व, सूर्यनमस्कार का स्वास्थ्य की दृष्टि से महत्व ।

प्राणायाम के प्रकार तथा उनका दैनिक स्वास्थ्य एवं चिकित्सा में उपयोग ।

35 अंका

नैसर्गिक आरोग्य का महत्व, नैसर्गिक आरोग्य के साधन, सूर्य रश्मि चिकित्सा, मृत्तचिकित्सा, मिट्टी की पट्टियाँ, जलचिकित्सा, पानी की पट्टियाँ, स्नान (कटिस्नानादि) वाष्पचिकित्सा, लंघन तथा उपवास का चिकित्सा में उपयोग ।

30 अंका

आहार विधि एवं पोषण-आहार परिभाषा, प्रकार संगठन, आहार के कार्य एवं महत्व, समह आहार, आयु, लिङ्ग, व्यवसाय, ऋतु आदि के अनुसार आहार व्यवस्था, उत्तम आहार विधि विषम आहार जन्य व्याधियाँ, जीवनीय तत्व के प्रकार उनके कार्य तथा हीनता जनित रोग, रोगनिवारण में शाक का महत्व, फलाहार एवं दुग्धाहार ।

पाठ्यग्रन्थ :—

1. स्वास्थ्य और योगासन
2. सरल योग विज्ञान
3. व्यायाम और शारीरिक विकास
4. प्राकृतिक चिकित्सा विधि ।

प्रायोगिक :

नं. 1 और नं. 2 का प्रायोगिक सम्मिलित रूप से होगा जिसका पूर्णांका 100 होगा ।

आलोच्च ग्रन्था :

1. योग चिकित्सा प्रथम भाग, द्वितीय भाग ।

दिनांक 2 नवम्बर, 1979 को मध्याह्न 12.00 बजे राजस्थान विश्वविद्यालय प्रति-कुलपति सचिवालय, जयपुर में सम्पन्न हुई संस्कृत अध्ययन के अध्ययन मण्डल की बैठक का कार्यवाही विवरण ।

#### उपस्थित :

1. पं. श्याम नन्द मिश्र, (संयोजक)
2. पं. मूर्य नारायण झा
3. पं. रामपाल शर्मा,
4. पं. चण्डी प्रसादाचार्य,
5. पं. विश्व नाथ मिश्र,
6. पं. चन्द्रवर भारद्वाज शर्मा,
7. पं. गुलाब चन्द जैन,
8. पं. कैलाश चतुर्वेदी,
9. पं. वैद्य मदनलाल शर्मा (विशेष आमन्त्रित)

संयोजक—आद्युर्वेद अध्ययन मण्डल

1. राजस्थान विश्वविद्यालय अविनियम की धारा 34(4)(IV) के अन्तर्गत 1980 की संस्कृत अध्ययन संकायान्तर्गत परीक्षाओं के लिए परीक्षक चयन समिति पर संयोजक के अतिरिक्त मण्डल के सदस्य के रूप में पं. श्री चण्डी प्रसादाचार्य, प्रो. व्याकरण, महाराजा संस्कृत कालेज, जयपुर को सर्वसम्मति से निर्वाचित किया गया ।

2. विश्वविद्यालय के परिनियम 25(2)(ए) के प्रावधानान्तर्गत परीक्षक तालिका को संशोधित किया गया । (परिशिष्ट—1) ।

3. सन् 1979 में सम्पन्न हुई संस्कृत अध्ययन संकाय की विभिन्न परीक्षाओं के परीक्षक प्रतिवेदनों का अवलोकन किया गया । अवलोकनोपरान्त निम्न टिप्पणी संस्तुत की गई :—

(क) जास्त्री और आचार्य परीक्षाओं के समस्त परीक्षकों के प्रतिवेदनों का अवलोकन किया । खेद का विषय है कि कतिपय परीक्षकों ने प्रतिवेदनों में कुछ भी नहीं लिखा है ।

(ख) अधिकांश प्रतिवेदनों में परीक्षाओं का नन्व्य रहा है कि छात्री एवं अध्यापक का औद्योगिक स्तर वर्तमान स्तर से होता जा रहा है। यदि इसका निराकरण नहीं किया गया तो संस्कृत की स्थिति एकदम दयनीय हो जायेगी। अतः जनसंख्याओं में मुख्य शिक्षकों से अध्यापन की समुचित व्यवस्था की जाये।

4. निम्नलिखित परीक्षाओं के लिए अंकित वर्षों के लिए पाठ्यक्रम का निर्धारण करो एवं उत्तमव्यवस्थित अध्यापकों/विषयों में आवश्यक परिवर्तन परिवर्तन करने हेतु विचार किया गया :—

1. प्रथम वर्ष छात्री परीक्षा, 1982
2. द्वितीय वर्ष छात्री परीक्षा, 1982
3. तृतीय वर्ष छात्री परीक्षा, 1982
4. अध्यापक प्रथम छह परीक्षा, 1982
5. अध्यापक द्वितीय छह परीक्षा, 1983

विचारोपरान्त निर्णय लिया गया कि 1981 की विभिन्न परीक्षाओं के लिए संस्तुत पाठ्यक्रम अभी तक मुद्रित एवं संगोदित रूप में उपलब्ध नहीं हो सके हैं, जिनके अभाव में 1982 के पाठ्यक्रम पर सम्यक रूप से विचार किया जाना अपूरण होगा। अतः निम्नांकित सदस्यों की एक समिति गठित कर दी जाये जो विश्वविद्यालय द्वारा 1982 की विभिन्न परीक्षाओं के संशोधित पाठ्यक्रम उपलब्ध कराये जाने पर उनका समीक्षा रूप में अद्यतन कर 1982 की परीक्षाओं का संगोदित पाठ्यक्रम तैयार करेगी :

1. श्री श्यामानन्द मिश्र,
2. श्री चण्डी प्रसादाचार्य,
3. श्री कैलाश चतुर्वेदी,

उक्त समिति पाठ्यक्रम का निर्धारण करते समय माध्यमिक शिक्षा बोर्ड की परीक्षाओं के वर्तमान पाठ्यक्रम को भी ध्यान रखेगी। समिति द्वारा संस्तुत पाठ्यक्रम को बोर्ड द्वारा संस्तुत माना जावे।

5. पं. श्याम नन्दन मिश्र, संयोजक, संस्कृत-अध्ययन के अध्यापन महालय द्वारा अधिप्रेषित पत्र दिनांक 27-7-79 की संस्तुति अनुसार छात्री प्रथम वर्ष के निम्नांकित वर्गों के पाठ्यक्रम में आवश्यक आंशिक संशोधनार्थ प्रा. श्री रामगोपाल



शास्त्री, संयोजक-विद्वत् समिति, श्री सर्वेश्वर संसद, जयपुर के पत्र क्रमांक निती./पा./भा./512 दिनांक 23-7-79 (परिशिष्ट-II) पर विचारोपरान्त संस्तुति की कि इसे 1981 की परीक्षा के लिए यथावत स्वीकार किया जावे।

6. संस्कृताध्ययन संकाय की 'निश्चय संख्या' 15 दिनांक 9 एवं 10 जनवरी, 79 'जिसमें संस्कृताध्ययन के अध्ययन मण्डल की निश्चय संख्या 5(III), दिनांक 15/16 सितम्बर, 78 द्वारा गठित द्वि सदस्यीय समिति की संस्तुति पर विचार किया गया था, की संस्तुति के अनुसार निम्नलिखित बिन्दु पर मण्डल ने विचार विमर्श कर संस्तुति की कि इसे यथावत स्वीकार किया जावे।

शास्त्री अन्तिम वर्ष के व्याकरण विषय के द्वितीय पत्र में "परिभाषेन्दु शेखर" द्वितीय एवं तृतीय तन्त्र को रखा जाना ही समीचीन है क्योंकि इस पत्र के अन्तर्गत छात्रों को केवल एक ही ग्रन्थ का अध्ययन करना होता है। महाभाष्य ग्रन्थ को इस पत्र में रखने से छात्रों पर ग्रन्थभार व विषय भार बढ़ जाता है।

आचार्य द्वितीय खण्ड के व्याकरण विषय के तृतीय पत्र से पारिभाषेन्दु शेखर का तृतीय तन्त्र हटा दिया जाना चाहिए, क्योंकि छात्र इसे शास्त्री तृतीय वर्ष में ही पढ़ लेता है। महाभाष्य की गरिमा को ध्यान में रखकर इस पत्र में केवल महाभाष्य (नवाह्निक) मात्र रखा जाना समीचीन है।

7. संस्कृताध्ययन संकाय के निश्चय संख्या 2(1) दिनांक 9 एवं 10 जनवरी, 1979 के संदर्भ सहित संस्कृताध्ययन के अध्ययन मण्डल की निम्न-लिखित संस्तुति संख्या 5(क) दिनांक 15/16 सितम्बर, 1978 पर पुनर्विचार कर संस्तुति की कि नवीन संशोधित पाठ्यांश स्वीकार किया जावे तथा माध्यमिक शिक्षा बोर्ड, अजमेर की पाठ्यक्रम समिति से निवेदन किया जावे कि कि वह उपाध्याय परीक्षा के व्याकरण द्वितीय पत्र में "स्त्री प्रत्यय" प्रकरण को सम्मिलित कर लें। जिससे कि माध्यमिक शिक्षा बोर्ड, एवं विश्वविद्यालय, के पाठ्यक्रमों में तालमेल रहे :

5(क) शास्त्री परीक्षा (प्रथम वर्ष), 1981 के विषय नव्य व्याकरण "प्रथम पत्र" में "सिद्धान्त कौमुदी," के वर्तमान में निर्धारित प्रकरण "स्त्री प्रत्यय" को हटा दिया जावे तथा संशोधित पाठ्यांश "कारक प्रकरण से समासाश्रय" तक रखा जावे।

8. अकादमी परिषद के निम्ननिर्दिष्ट निश्चय संख्या 14 दिनांक 27 जुलाई, 79 के संदर्भ में प्रथम वर्ष शास्त्री परीक्षा, 1981 के वर्ग-1 के "सामान्य-संस्कृत" विषय के प्रश्नपत्र के विकल्प रूप में (पूर्व आयुर्वेद) विषय के एक प्रश्नपत्र का पाठ्यक्रम निर्धारित करने हेतु विचार किया गया:—

14. With reference to the Syndicate Resolution No. 3(I) dated 6th June, 1979 the Academic Council reconsidered the recommendations made earlier, recommendation No. 2(i), dated the 1st June, 1979 with the observation of the syndicate that the recommendations regarding courses of study for the Pre-Ayurveda as an alternative subject of 'Samanya Sanskrit' at the Shastri First Year Examination of 1980 are under the purview of the Faculty of Sanskrit studies itself.

In this connection the Council noted the decision made under its earlier Res. No. 2(I) dated the 1st June, 1979 and resolve that (i) introduction of 'Pre-Ayurveda' course group as an alternative to the subject of 'Samanya Sanskrit' be introduced with effect from the Examination of 1981 and (ii) that the courses of study in this paper in future be recommended by the Board/Faculty of Sanskrit studies at a meeting where the Convener, Board of Studies in Ayurveda be specially invited.

इस संदर्भ में विदित हुआ कि राजस्थान नाय्यनिक विज्ञान बोर्ड द्वारा प्रवेशिका तथा उपाध्याय परीक्षा के पाठ्यक्रम में "श्री-आयुर्वेद पाठ्य संहिता के 1—संस्कृत, 2—प्रारम्भिक पदार्थ विज्ञान, 3—उद्भिज्ज्ञांग प्रत्यंग विज्ञान तथा 4—प्रारम्भिक रसायन परिचय का समावेश किया जा चुका है। अतः संस्तुति की गई कि अधिष्ट एक पाठ्य संहिता "आयुर्वेदविज्ञान तथा परिचय" के एक प्रश्नपत्र का समावेश शास्त्री प्रथम वर्ष परीक्षा 1981 के "सामान्य संस्कृत" के वैकल्पिक विषय "पूर्व आयुर्वेद" के अन्तर्गत परिशिष्ट-III के अनुसार किया जावे।

9. संस्कृत अध्ययन संकाय ने अपने निश्चय संख्या 2(II) दिनांक 9 एवं 10 जनवरी 1979 के अन्तर्गत संस्कृत अध्ययन के अध्ययन मण्डल की निश्चय संख्या 5(इ) (II दिनांक 15 एवं 16 नवम्बर, 1978 द्वारा गठित समिति द्वारा निर्मित शास्त्री द्वितीय एवं तृतीय वर्ष परीक्षा 1979 के निर्मित वर्ग (1) के व्याकरणांग के लिये चुने हुये मुद्रों की स्वीकार करते हुये।

1980 एवं आगे की परीक्षाओं के लिए एक समिति को उन सूत्रों पर पुनर्विचार कर अपनी संस्तुति मण्डल के समक्ष प्रस्तुत करने के अधिकृत किया था ।

एतदर्थ उक्त समिति की दिनांक 17 अगस्त 79 को सम्पन्न बैठक की संस्तुतियों (परिशिष्ट IV) को मण्डल ने विचारविमर्शों परान्त स्वीकार करने की संस्तुति की ।

10. राजस्थान विश्वविद्यालय के भूतपूर्व कुलपति श्री वेदपाल त्यागी के आकस्मिक निधन पर यह सभा शोक संतप्त है तथा स्वर्गीय आत्मा को शांति प्रदान करने की परमपिता परमेश्वर से प्रार्थना करती है ।

मण्डल का यह मानना है कि श्री त्यागी जी के उठजाने से राष्ट्र ने जहां एक महामानव खो दिया वहां संस्कृत जगत ने एक संस्कृत शिक्षा का कर्णधार खो दिया ।

अन्त में संयोजक महोदय के धन्यवादोपरान्त कार्यवाही समाप्त हुई ।

ह०/-

श्यामनन्दन मिश्र संयोजक

## परिशिष्ट 1

## संस्कृत अध्यापन संकाय

त्रिवर्षीय शास्त्री परीक्षा परीक्षक पैनल वर्ष परीक्षा, 1979-80

क्र. सं.	शैल. योग्यताएँ	संस्था का नाम	30-6-78 को डिग्री/शास्त्री अध्यापन अनु.
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## व्याकरण/सामान्य संस्कृत

## अन्तः परीक्षक

- |  |   |         |
|--|---|---------|
| 1. शर्मा सूर्यनारायण,<br>प्रिन्सीपल      | प्राच्य विद्यापीठ शाहपुरा<br>बाग, अमेर रोड, जयपुर | 30 वर्ष |
| 2. त्रिपाठी, श्रीनारायण,<br>प्राचार्य    | राजकीय संस्कृत कालेज,<br>उदयपुर                   | 13 वर्ष |
| 3. शर्मा, जगदीशप्रसाद,<br>(व्याकरण)      | संस्कृत कालेज, चिड़ावा                            | 8 वर्ष  |
| 4. शर्मा, कन्हैयालाल<br>(व्याकरण)        | रा. सं. कालेज चिड़ावा                             | 16 वर्ष |
| 5. शर्मा, पीताम्बर (व्याकरण)             | राजकीय संस्कृत कालेज,<br>महापुरा                  | 21 वर्ष |
| 6. मिश्र, नरसिंह प्रसाद<br>(व्याकरण)     | राज. सं. कालेज, चिड़ावा                           | 10 वर्ष |
| 7. शास्त्री, दामोदर प्रसाद,<br>प्राचार्य | रमा. वे. सं. कालेज, पुष्कर                        | 33 वर्ष |
| 8. शास्त्री, वृद्धिचन्द, प्राध्यापक      | रा. सं. का. चिराणा                                | 5 वर्ष  |
| 9. मिश्र, विश्वनाथ, प्राचार्य            | शास्त्री संस्कृत विद्यापीठ,<br>बीकानेर            | 19 वर्ष |
| 10. शर्मा, नरेन्द्रकुमार (व्याकरण)       | राज. न. सं. कालेज,<br>उदयपुर                      | 6 वर्ष  |

11. प्रतिहस्तनमोनारायण, प्राचार्य	रा. सं. कालेज, कोटकासिम	7 वर्ष
12. शास्त्री, सूर्यप्रकाश (व्याकरण)	रामानुज, संस्कृत कालेज, डीडवाना	15 वर्ष
13. कलावटिया, राधेश्याम प्राचार्य (सा. सं. एवं व्याकरण)	रा. सं. कालेज, दीसा	11 वर्ष व्या. 7
14. कोटियाल, महीवर, प्राचार्य	सार्वजनिक सं. कालेज, दारां	13 वर्ष
15. झा, दिगम्बर (व्याकरण)	सं. कालेज, तलावगांव	14 वर्ष
16. आचार्य, चण्डीप्रसाद	महाराजा संस्कृत कालेज, जयपुर	
17. त्रिपाठी, श्यामाचरण	शार्दूल संस्कृत विद्यापीठ, दीकानेर	
18. जोशी, मोतीलाल, प्राचार्य	प्रोफेसर संस्कृत कालेज, उदयपुर	
19. ठाकुर, रामेश्वर, प्राध्यापक सा. सं.	विट्ठलनाथ संस्कृत कालेज, कोटा	
20. मिश्र, मांगीलाल	संस्कृत कालेज, उदयपुर	
21. वैद्यनाथ झा, प्राचार्य	प्राचार्य संस्कृत कालेज, खाड़गदा (राज.)	
22. शर्मा, नारायण सहाय	प्रवक्ता, शास्त्री संस्कृत कालेज, महापुरा	5 वर्ष

#### बाह्य परीक्षक

1. द्विवेदी, शिवलाल	जाडा गणेश, ब्रह्मपुरी जयपुर
2. मिश्र खडगनाथ	चांदी की टकसाल, जयपुर
3. शास्त्री, पं. सीताराम	हिन्दू वि. वि., वाराणसी
4. मिश्र, गोमिंत	बडौदा संस्कृत महाविद्यालय, बडौदा-6
5. सूर्यनारायण शास्त्री	अस्सी, वाराणसी

6. सुदर्शन, द्विवेदी

व्याकरण विभाग, विश्वनाथ  
गुरुकुल संस्कृत महाविद्यालय,  
वाराणसी

## साहित्य/सामान्य संस्कृत

ग्रन्तः परीक्षक

1. चतुर्वेदी, नरोत्तम (व्याकरण)	रा सं. कालेज, कालाडेरा	14 वर्ष
2. शर्मा, सूर्यनारायण, प्रिंसिपल	प्राच्यविद्यापीठ, जयपुर	30 वर्ष
3. चूलेट, श्यामसुन्दर, प्राचार्य	राजकीय संस्कृत कालेज, मनोहरपुर	13 वर्ष
4. दीक्षित, राधाकृष्ण, प्राचार्य (व्याकरण)	राजकीय संस्कृत कालेज, सीकर	19 वर्ष
5. शर्मा. प्यारेमोहन, प्राचार्य	राजकीय संस्कृत कालेज, कालाडेरा	12 वर्ष
6. शास्त्री, डा. वासुदेव, प्रोफेसर	राजकीय संस्कृत कालेज, जयपुर	12 वर्ष
7. शर्मा, सूर्यनारायण, प्रिंसिपल	प्राच्यविद्यापीठ, जयपुर	30 वर्ष
8. जोशी, मोतीलाल, प्रोफेसर	संस्कृत कालेज, उदयपुर	20 वर्ष
9. शर्मा, राधाकृष्ण (धर्म.)	राजकीय संस्कृत कालेज, जयपुर	7 वर्ष
10. दाधीच, रतनलाल, प्रोफेसर	राजकीय संस्कृत कालेज, जयपुर	12 वर्ष
11. मिश्र, गजानन्द, प्राचार्य	विरला संस्कृत कालेज, पिलानी	8 वर्ष
12. शास्त्री, दामोदर (प्राचार्य)	रमावैकुण्ठ विद्यापीठ, पुष्कर	39 वर्ष
13. शास्त्री, रामनिवास, प्राध्यापक	रमावैकुण्ठ विद्यापीठ, पुष्कर	10 वर्ष
14. श्रीधर, सीताराम (व्याकरण)	राजकीय म. सं. कालेज, महापुरा	7 वर्ष

15. गौतम, डा. नंदकिशोर	राजकीय संस्कृत कालेज, जयपुर	5 वर्ष
16. विशम्भर दयाल शास्त्री, प्राध्यापक	सं. का. जोधपुर	7 वर्ष
17. कन्हैयालाल शास्त्री, प्राध्यापक	सं. का. चिड़ावा	7 वर्ष
18. जोशी, छत्रपाल (व्याकरण)	राजकीय विसंस्कृत कालेज, कोटकासिम	20 वर्ष
19. ठाकुर, केशव (व्याकरण)	सरस्वती विद्यापीठ, कोटा	14 वर्ष
20. शास्त्री, मारिक्वलाल (व्याकरण)	चमाडिया संस्कृत कालेज, फतेहपुर	7 वर्ष
21. शास्त्री, लक्ष्मीनारायण (व्याकरण)	रामानुज संस्कृत कालेज, डीडवाना	15 वर्ष
22. शुक्ला, द्वारिकानाथ, (व्याकरण)	शार्दूल संस्कृत विद्यापीठ, वीकानेर	19 वर्ष
23. शर्मा, सुरेन्द्र, प्राचार्य	संस्कृत कालेज, तलावगांव	9 वर्ष
24. त्रिपाठी, रूपनारायण (व्याकरण) प्रोफेसर साहित्य	दिगम्बर जैन संस्कृत कालेज, जयपुर	12 वर्ष
25. जोशी, नटवर (प्राचार्य)	ऋषिकुल ब्रह्मचर्याश्रम, लक्ष्मणगढ़	16 वर्ष
26. शास्त्री, गणेशदत्त (व्याकरण)	रुंगटा संस्कृत कालेज, वगड़	14 वर्ष
27. भा, दिगम्बर (व्याकरण)	संस्कृत कालेज, तलावगांव	13 वर्ष
28. शास्त्री, पुरुषोत्तम (नया समावेश)	वलदेव दास वाजोरिया सं. महाविद्यालय, जयपुर	3 वर्ष
29. चतुर्वेदी, कैलाश	महा. सं. कालेज, उदयपुर	5 वर्ष
30. शास्त्री, सोहनलाल प्राध्यापक	रा. सं. कालेज, मनोहरपुर	5 वर्ष
31. प्रतिहस्त, उग्रानंद	विठ्ठलनाथ संस्कृत कालेज, कोटा	5 वर्ष

32. शास्त्री, वजरंगलाल	विट्ठलनाथ संस्कृत कालेज, कोटा	5 वर्ष
33. शर्मा, सुरेन्द्रकुमार	प्राचार्य संस्कृत कालेज, तलावगांव	8 वर्ष
34. शर्मा, केदार प्रसाद	प्राचार्य संस्कृत कालेज, लालसोट (जयपुर)	8 वर्ष
35. रामस्वरूप शर्मा	प्राध्यापक सं. का. सीकर	5 वर्ष

#### बाह्य परीक्षक :

1. कथाभट्ट, जगदीशचन्द्र	चोवावतजी मंदिर, जौहरी बाजार, जयपुर	25 वर्ष
2. पुरोहित, परमानन्द शर्मा	अम्बापोल, उदयपुर	25 वर्ष
3. द्विवेदी गंगाधर	सरस्वती पीठ, ब्रह्मपुरी जयपुर	30 वर्ष
4. शास्त्री, उमेश प्राध्यापक	पारीक महाविद्यालय, जयपुर	20 वर्ष
5. शर्मा, डा. भदनमोहन	महारानी कालेज, राज. वि. वि. जयपुर	20 वर्ष
6. डॉ. रामदत्त शर्मा	प्राध्यापक राजकीय महाविद्यालय भिवानी, (हरियाणा)	10 वर्ष

#### ज्योतिष/सामान्य संस्कृत/फालित ज्योतिष

##### अन्तः परीक्षक

1. शर्मा, रामपाल, प्रोफेसर	राज. म. सं. कालेज, जयपुर	10 वर्ष
2. शर्मा, कृष्णगोपाल (व्याकरण)	राज. म. सं. कालेज, जयपुर	5 वर्ष
3. मिश्र, श्यामनन्दन, प्राचार्य	विट्ठलनाथ संस्कृत कालेज, कोटा	
4. त्रिपाठी, गंगाधर मणि, ज्योतिषाचार्य,	संस्कृत कालेज, मेडता सिटी	



5. प्रतिहस्त, नगेन्द्र

विठ्ठलनाथ संस्कृत कालेज,  
कोटा

बाह्य परीक्षक :

- |   |   |
|---|---|
| 1. शर्मा, कल्याणदत्त,<br>रिटायर्ड, सुपरवाइजर मंत्रालय | कुन्दीगरी के भैंरु का रास्ता,<br>जयपुर              |
| 2. ठाकुर, श्रीकान्त,<br>रिटायर्ड व्याख्याता           | विनोदीलाल जी का मन्दिर,<br>त्रिपोलिया बाजार, जयपुर  |
| 3. भा, विष्णुकांत, प्रोफेसर                           | सनातन धर्म संस्कृत कालेज, अम्बाला<br>छावनी, हरियाणा |

इतिहास

अन्तः परीक्षक :

- |  |                                     |        |
|--|-------------------------------------|--------|
| 1. चतुर्वेदी, बालचन्द्र<br>(व्याकरण)     | सं. कालेज, दौसा                     | 8 वर्ष |
| 2. जैन, शान्ति कुमार<br>(व्याकरण)        | सार्वजनिक सं. कालेज,                | 5 वर्ष |
| 3. श्रीवास्तव, श्रीमती वीणा<br>(व्याकरण) | महाराजा संस्कृत कालेज,<br>जयपुर     | 6 वर्ष |
| 4. छावड़ा, श्रीमती सुमित्रा              | जैन दिगम्बर संस्कृत कालेज,<br>जयपुर |        |

बाह्य परीक्षक :

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|-------------------------------|---|
| 1. शर्मा, डा. एम. एल.         | सी स्कीम, जयपुर   |
| 2. जैन, डा. एस.एस.            | पो. 1239, मोती मार्ग,<br>वापू नगर, जयपुर                                |
| 3. शर्मा, रामचन्द्र, उपाचार्य | राजकीय महाविद्यालय,<br>नीम का घाना                                      |
| 4. शर्मा, चन्द्रशेखर          | राजपि कालेज, अलवर   |
| 5. इन्द्रदेव त्यागी           | राजस्थान शिक्षक प्रशिक्षण<br>विद्यापीठ, शाहपुरा बाग,<br>अमेर रोड, जयपुर |

## अर्थशास्त्र

## अन्तः परीक्षक

- |                           |                                   |        |
|---------------------------|-----------------------------------|--------|
| 1. गुप्ता, गजानन्द, व. अ. | राजकीय संस्कृत कालेज,<br>मनोहरपुर | 7 वर्ष |
|---------------------------|-----------------------------------|--------|

## बाह्य परीक्षक

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|--|---|
| 1. तैला, एस. सी. प्राचार्य                           | एस. जी टी कालेज,<br>रानावास, पाली                     |
| 2. श्रीवास्तव, आर. पी.<br>अध्यक्ष, अर्थशास्त्र विभाग | अग्रवाल कालेज, जयपुर                                  |
| 4. पारीक, वी.एल. प्राचार्य                           | वी.एस सी. श्रम जीवी<br>कालेज, अजमेर                   |
| 5. शर्मा, श्रीकृष्ण, प्रवक्ता                        | " " "   |
| 6. शर्मा, सतीश, अध्यक्ष<br>अर्थशास्त्र विभाग         | वी. जे. एस आर. जैन<br>कालेज, बीकानेर                  |
| 7. गुप्ता, जी.एल. प्रवक्ता                           | राजकीय महाविद्यालय, वाराणसी                           |
| 8. माधुर जी. पी.                                     | राजकीय महाविद्यालय<br>श्रीगंगानगर                     |
| 9. मोदी, पी. एल.<br>एम्पलाइड इकनामिक्स<br>विभाग,     | जी. एल. विहारणी एस.<br>डी. महाविद्यालय<br>श्रीगंगानगर |
| 10. गौड़, डा. एस पी. प्राचार्य                       | वी.एस.एस.डी. कालेज,<br>कानपुर (यू. पी.)               |
| 11. विहानी, प्रो. पी. एन.                            | राज. पी. जी. कालेज,<br>दीगुना (एम. पी.)               |
| 13. ब्रविड, प्रोफेसर, जी. डी.                        | 75, अम्बामाता, उदयपुर                                 |

## मनोविज्ञान

## बाह्य परीक्षक

- |                    |  |
|--------------------|--|
| 1. कंटारिया, धनराज | स्व. गो. पारीक प्रशिक्षण<br>महा. जयपुर |
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|----------------------------|---|
| 2. चाँदे, माधुरी, प्रवक्ता | लो.मा.ति प्रशिक्षण महा.<br>डबोक, उदयपुर |
| 3. त्यागी इद्रं देव        | राज. शिक्षक प्र. विद्यापीठ,<br>जयपुर    |

### राजनीति विज्ञान

#### अन्तः परीक्षक

- |                         |                                    |         |
|-------------------------|------------------------------------|---------|
| 1. पूनिया, बनवारी लाल   | विरला, सं. कालेज,<br>पिलानी        | 10 वर्ष |
| 2. ऋडू, गोपाललाल        | रा. सं. विद्यालय, महापुर,<br>जयपुर |         |
| 3. नेमीचन्द्र           | संस्कृत कालेज, वगड़                |         |
| 4. अग्रवाल, श्यामसुन्दर | राजकीय संस्कृत कालेज,<br>सीकर      | 9 वर्ष  |

#### बाह्य परीक्षक

- |                                     |  |
|-------------------------------------|--|
| 1. श्रीमती कमला वशिष्ठ              | प्राध्यापक राजस्थान शिक्षक<br>प्रशिक्षण विद्यापीठ शाहपुरा<br>वाग-आमेर रोड, जयपुर |
| 2. राठोड़ डा. लक्ष्मणसिंह           | जोधपुर वि. वि., जोधपुर   |
| 3. नैनावती, चतुसिंह, व.<br>प्रवक्ता | एम. वी. कालेज, उदयपुर  |
| 4. सिंहवी, वजरंगलाल, प्रवक्ता       | एन.एल.वी कालेज, डबोक,<br>उदयपुर  |
| 5. डा. सुरेशचन्द्र, प्रवक्ता        | डी.आई.पी. एस. पिलानी   |
| 6. कुमारी ब्राह्मणी पाठक            | रा. शिक्षक प्रशिक्षण<br>विद्यापीठ, जयपुर   |

### वेद/सामान्य परोहित्य/सामान्य संस्कृत

#### अन्तः परीक्षक

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|-----------------------------------|--|
| 1. भारद्वाज, चन्द्रवर, व्याख्याता | महाराजा संस्कृत कालेज<br>राजस्थान, जयपुर |
|-----------------------------------|--|

## बाह्य परीक्षक

- |  |  |
|--|--|
| 1. चतुर्वेदी, रामनारायण                        | निदेशक, संस्कृत शिक्षा,<br>जयपुर                                 |
| 2. शर्मा, प्रभुदयाल, व्याख्याता                | उपनिरीक्षक संस्कृत शिक्षा<br>राजस्थान, जयपुर                     |
| 3. वेदाचार्य, सूर्यनारायण                      | गणेश मंदिर, खेजड़ो का<br>रास्ता, जयपुर                           |
| 4. वेदाचार्य, शिवप्रताप                        | शुक्लाल व्यास की गली<br>ठठेरों का रास्ता, चौड़ा<br>रास्ता, जयपुर |
| 5. मिश्र, डा. गोपालचन्द्र,<br>वेद विभागाध्यक्ष | संस्कृत विश्वविद्यालय<br>वाराणसी                                 |
| 6. मिश्र, भगवतप्रसाद                           | ब्रह्मनाल, वाराणसी   |
| 7. डा. युगल किशोर                              | 7, अध्यापक निवास, संस्कृत<br>वि.वि. वाराणसी                      |
| 8. द्विवेदी, रामशंकर                           | ब्रह्मपुरी, उदयपुर   |
| 9. गुप्ता, डा. सुधीर कुमार                     | राजस्थान विश्वविद्यालय,<br>जयपुर                                 |
| 10. दावीच, चेतनप्रकाश                          | राज. हा. सै. विद्यालय,<br>देवली छावनी, टोंक                      |

## जैन दर्शन/सामान्य संस्कृत

## अन्तः परीक्षक

- |                              |                                     |          |
|------------------------------|-------------------------------------|----------|
| 1. जैन, गुलाबचन्द, प्राचार्य | दिगम्बर जैन संस्कृत<br>कालेज, जयपुर | — 8 वर्ष |
| 2. धानुष्कर महादेव (व्याकरण) | " " "                               | 4 वर्ष   |

## बाह्य परीक्षक

- |   |                         |
|---|-------------------------|
| 1. कोठिया, वदरीलाल, प्राध्यापक<br>जैन दर्शन | वी. एच. यू., बनारस      |
| 2. जैन, अमृतलाल, प्राध्यापक                 | संस्कृत वि. वि. वाराणसी |

3. शीतल चन्द्र जैन विभागाध्यक्ष स्याद्विद्वाद् महाविद्यालय  
दर्शन विभाग वनारस भदौनी

### सामान्य दर्शन/सामान्य संस्कृत

#### अन्तःपरीक्षक

- |                                    |  |
|------------------------------------|--|
| 1. झा, सूर्यनारायण, प्राचार्य      | वे. वे. संस्कृत महाविद्यालय,<br>चिड़वा |
| 2. त्रिपाठी, श्रीनारायण, प्राचार्य | राजकीय संस्कृत कालेज,<br>दौसा          |

#### बाह्य परीक्षक

- |  |   |
|--|---|
| 1. चतुर्वेदी, रामनारायण                        | निदेशक, संस्कृत शिक्षा,<br>जयपुर                    |
| 2. मिश्र, छा इगनाय, रिटायर्ड<br>प्रिन्सिपल     | चांदी की टकसाल, जयपुर                               |
| 3. शर्मा, गोविन्दनारायण<br>रिटायर्ड प्रिन्सिपल | भूरा टीडा, जयपुर                                    |
| 4. नवपु, दीनानाथ, रिटायर्ड<br>व्याख्याता       | भारती संस्कृत मासिक,<br>गोपाल जी का रास्ता<br>जयपुर |
| 5. दवे, चन्द्रकान्त                            | राष्ट्रीय संस्कृत संस्थान,<br>दिल्ली                |
| 6. डा. आर. सी. द्विवेदी                        | राजस्थान वि.वि. जयपुर                               |

### हिन्दी साहित्य

#### बाह्य परीक्षक

- |                        |                                   |         |
|------------------------|-----------------------------------|---------|
| 1. चतुर्वेदी, कैलाश    | महाराणा संस्कृत कालेज,<br>जयपुर   | 10 वर्ष |
| 2. शर्मा, जगदीशप्रसाद  | रामानुज संस्कृत कालेज,<br>डीडवाना | 10 वर्ष |
| 3. गुप्ता, गोकूलचन्द्र | राज. सं. कालेज, चिराणा            | 13 वर्ष |
| 4. शर्मा, राधामोहन     | रा. सं. कालेज, जयपुर              | 13 वर्ष |

5. योगी, नांगीलाल	रा. संस्कृत कालेज, कावाडेरा	17 वर्ष
6. कांभिक, श्रीराम	राज. संस्कृत कालेज, कोटकासिन	7 वर्ष
7. मट्टे, गोपीराम	रा. सं. कालेज, उदयपुर	8 वर्ष
8. गोस्वामी, देवकीनंदन	राज. संस्कृत कालेज, अजमेर	12 वर्ष
9. चौधरी, मुक्तिनाथ	गार्डन संस्कृत विद्यापीठ, दीकानेर	6 वर्ष
10. गहलोत, हनुमानचिह्न	रा. सं. कालेज, सीकर	10 वर्ष
11. शर्मा, डा. विष्णुदत्त	दिगम्बर जैन संस्कृत कालेज, जयपुर	8 वर्ष
12. रावडा, डा. प्रेमचन्द	संस्कृत कालेज, नगोहरपुर	5 वर्ष
13. शर्मा, ओम प्रकाश	विद्योतनाथ संस्कृत कालेज, कोटा	8 वर्ष

## बाह्य परीक्षक

1. सिंह, डा. गन्धुनाथ हिन्दी विभाग	संस्कृत विश्वविद्यालय, काशी
2. शर्मा, डा. राजेन्द्र हिन्दी विभागप्रमुख	राज. वि. वि. जयपुर
3. शर्मा, भवभूति	अप्रदात कालेज, जयपुर
4. शर्मा, नवलकिशोर	एम. डी. कालेज, उदयपुर
5. शर्मा, कल्याण महाम	रा. वि. प्र. विद्यापीठ जयपुर
6. डा. रमेशचन्द्र, उप-प्राचार्य	राज. महाविद्यालय, मालावाड़
7. शर्मा, डा. रामदत्त	राजकीय पी. डी. कालेज, मिर्गानी. 125021, हरियाणा
8. आर्य, उमेश	राजीव कालेज, जयपुर

## भाषा विज्ञान एवं संस्कृत साहित्य का इतिहास/सामान्य संस्कृत

## अन्तःपरीक्षक

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|----------------------------------|--|---------|
| 1. कलावटिया, राधेश्याम प्राचार्य | राज. संस्कृत कालेज, दौसा                     | 10 वर्ष |
| 2. शास्त्री, रामचन्द्र एम.ए.     | रा. शि. प्र. विद्यापीठ<br>शाहपुरा बाग, जयपुर |         |
| 3. चतुर्वेदी, कैलाश              | महाराणा संस्कृत कालेज,<br>उदयपुर             | 10 वर्ष |

## बाह्य परीक्षक

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|----------------------------|-------------------------------------|---------|
| 1. चतुर्वेदी, ईश्वर प्रसाद | राज. संस्कृत कालेज,<br>जोधपुर       | 10 वर्ष |
| 3. चतुर्वेदी, शिवदत्त      | वनारस हिन्दू वि. वि.,<br>वनारस      |         |
| 4. शर्मा, डा. विश्नाथ      | राज. वि. वि. जयपुर                  |         |
| 5. डा. रामदत्त शर्मा       | राज.पी.जी. कालेज, भिवानी<br>हरियाणा |         |
| 6. शास्त्री, उमेश          | पारीक कालेज, जयपुर                  |         |
| 7. शास्त्री, रामचन्द्र     | राज. शिक्षा प्र. वि.,<br>जयपुर      |         |
| 8. श्रीमती शशिकला शर्मा    | " " "                               |         |

## समाज शास्त्र

## अन्तःपरीक्षक

- |                       |                      |
|-----------------------|----------------------|
| 1. गुप्ता गोकुलचन्द्र | रा.सं. कालेज, चिराणा |
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## बाह्य परीक्षक

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|--------------------------|--------------------------------|
| 1. विजय विहारी लाल माथुर | रा. शि. प्रि. विद्यापीठ, जयपुर |
|--------------------------|--------------------------------|

## अंग्रेजी साहित्य एवं अनिवार्य अंग्रेजी

## अन्तःपरीक्षक

- |                               |                                 |         |
|-------------------------------|---------------------------------|---------|
| 1. शर्मा, अवधेश कुमार (व्या.) | महा. सं. कालेज, जयपुर           | 10 वर्ष |
| 2. शर्मा, हरिचरण (व्या.)      | रा. सं. कालेज, महापुरा          | 10 वर्ष |
| 3. प्रतापसिंह, व्या.          | दि. जैन संस्कृत कालेज,<br>जयपुर | 7 वर्ष  |

4. शक्तावत, श्रीमती प्रफुल्ला कुमारी व्या.	राज. महा. संस्कृत कालेज, उदयपुर	7 वर्ष
5. शर्मा, वदरीनारायण, व्या.	राज. संस्कृत कालेज, कालाडेर	3 वर्ष
6. शर्मा, गोपाल व्या.	संस्कृत कालेज, वगड़	5 वर्ष
7. स्वामी, किशनलाल व्या.	संस्कृत कालेज, चिराणा	5 वर्ष
8. शर्मा, ईश्वरी प्रसाद, व्या.	बिट्ठलनाथ संस्कृत कालेज, कोटा	6 वर्ष
9. चौधरी, मूलचन्द	संस्कृत कालेज, दीसा	10 वर्ष
10. जी, रामचन्द्रन	संस्कृत कालेज, मनीहरपुर	3 वर्ष
11. दाधीच, रघुनंदन	संस्कृत कालेज, कालाडेर	3 वर्ष
12. भगरा, मांगीलाल	जैन संस्कृत कालेज, जयपुर	3 वर्ष

### बाह्य परीक्षक

1. सक्सेना, शलेन्द्र, साहित्य, प्रवक्ता	एस.एस. जैन सुबोध कालेज, जयपुर
2. गुप्ता, प्रेमचन्द. प्रवक्ता	रा. महाविद्यालय, प्रतापगढ़, (चित्तौड़गढ़)
3. जोशी, रामावतार, प्रवक्ता	श्री कल्याण रा. सं. कालेज, सीकर
4. प्रसाद, श्रीमती सरला, प्रवक्ता	महारानी कालेज, जयपुर
5. राय, जामी एम.एम. प्रवक्ता	अंग्रेजी विभाग राज.वि.वि. जयपुर
6. व्यास, हरगोपाल	एस. बी. डी. राज. महा. सरदारशहर
7. शर्मा, बी. बी. वरिष्ठ प्रवक्ता	राज. महाविद्यालय, श्रीगंगानगर



संस्कृत अध्ययन संकाय  
आचार्य परीक्षा पैन्स परीक्षा वर्ष 1980

क्र.सं.	नाम	संस्था का नाम	30/6/78 को पी.जी. आचार्य अध्ययन अनुभव
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( आचार्य प्रथम पत्र )

अतिवार्य-विषय

अन्तःपरीक्षक :—

- |    |                             |                                      |         |
|----|-----------------------------|--------------------------------------|---------|
| 1. | श्री रतनलाल दावीच, प्रोफेसर | महाराजा संस्कृत कालेज,<br>उदयपुर     |         |
| 2. | बहुवर्दी, कैलाश, प्रोफेसर   | महाराजा संस्कृत कालेज,<br>उदयपुर     |         |
| 3. | मिश्र, विश्वनाथ, प्राचार्य  | शार्दूल संस्कृत विद्यापीठ,<br>बोकारो | 20 वर्ष |
| 4. | मिश्र, राजानन्द, प्राचार्य  | बिरला संस्कृत कालेज,<br>पिलानी       |         |
| 6. | भारद्वाज, दामोदर, प्राचार्य | वैकुण्ठनाथ सं. न. वि.,<br>पुष्कर     |         |

बाह्य परीक्षक :—

- |    |                                      |  |         |
|----|--------------------------------------|--|---------|
| 1. | बहुवर्दी, डा. रामनारायण,<br>निदेशक   | संस्कृत शिक्षा, जयपुर                          | 15 वर्ष |
| 2. | मिश्र, छोटेलाल, रिटायर्ड<br>प्रोफेसर | साप्ताहिक कार्यालय, जवाहर<br>नगर, जयपुर        |         |
| 3. | डा. द्विवेदी, रामचन्द्र              | राजस्थान वि.वि., जयपुर                         |         |
| 4. | डा. गुप्ता, सुशीर कुमार              | " " "  |         |
| 5. | डा. भार्गव, पुष्पलाल लाल             | सेवानुत्त अध्ययन, जयपुर                        |         |
| 6. | शर्मा, ब्रह्मानन्द, अध्यक्ष          | संस्कृत विभाग, अजमेर                           |         |
| 7. | डा. जोशी, रत्तिक विहारी              | दिल्ली विश्वविद्यालय,<br>दिल्ली                |         |
| 8. | द्विवेदी, श्री सुरेश, अध्यापक<br>वेद | धर्म सनातन संस्कृत कालेज,<br>मुजफ्फरपुर, बिहार |         |

## ( आचार्य द्वितीय पत्र )

## अन्तःपरीक्षक :—

- |                                |                                       |
|--------------------------------|---------------------------------------|
| 1. भारद्वाज, दामोदर प्राचार्य  | वैकुण्ठनाथ सं. का., पुष्कर            |
| 2. चतुर्वेदी, कैलाश, प्राचार्य | महाराजा संस्कृत कालेज,<br>उदयपुर      |
| 3. मिश्र, गजानन्द, प्राचार्य   | विरला संस्कृत कालेज,<br>पिलानी        |
| 4. पाण्डेय, कुंजविहारी         | शार्दूल संस्कृत विद्यापीठ,<br>वीकानेर |
| 5. त्रिपाठी, रूपनारायण         | जैन दिगम्बर संस्कृत कालेज,<br>जयपुर   |

## बाह्य परीक्षक :—

- |  |   |
|--|---|
| 1. चतुर्वेदी, डा. रामनारायण,<br>निदेशक | संस्कृत शिक्षा, राज. जयपुर              |
| 2. गुप्त, डा. सुधीर कुमार              | राजस्थान वि.वि., जयपुर                  |
| 3. भार्गव, डा. पुरुषोत्तम लाल          | ” ” ”                                   |
| 4. द्विवेदी, डा. रामचन्द्र             | ” ” ”                                   |
| 5. जोशी, डा. रत्तिक विहारी             | दिल्ली विश्वविद्यालय, दिल्ली            |
| 6. द्विवेदी, गंगाधर                    | सरस्वती पीठ, ब्रह्मपुरी,<br>जयपुर       |
| 7. मिश्र, छोटे लाल                     | तान्त्रिक कार्यालय, जवाहर<br>नगर, जयपुर |

## ("विशिष्ट विषय" साहित्य)

## अन्तःपरीक्षक :—

- |                                      |                                       |         |
|--------------------------------------|---------------------------------------|---------|
| 1. शुक्ल, द्वारिका नाथ               | शार्दूल संस्कृत कालेज,<br>वीकानेर     |         |
| 2. पाठक, सदाशिव, प्राचार्य           | सरस्वती विद्यापीठ, कोटा               | 20 वर्ष |
| 3. मिश्र, विश्वनाथ, प्राचार्य        | शार्दूल संस्कृत विद्यापीठ,<br>वीकानेर | 20 वर्ष |
| 4. प्रतिहेस्त, उग्रानन्द, प्राध्यापक | विट्ठलनाथ संस्कृत कालेज,<br>कोटा      | 10 वर्ष |

5. त्रिनाथी, क्यानाचरण	शाहीब संस्कृत विद्यापीठ, बौकानेर	20 वर्ष
6. शर्मा, डा. वासुदेव	संस्कृत कालेज, जयपुर	5 वर्ष
7. बाबीन, श्री खेमलाल	महाराजा संस्कृत कालेज, जयपुर	5 वर्ष
8. जोशी, मोतीलाल, प्रोफेसर	महाराजा संस्कृत कालेज, जयपुर	

## बाह्य परीक्षक :

1. शर्मा, गोविन्द नारायण	हूटेरों का रास्ता, जयपुर	25 वर्ष
2. द्विवेदी, गंगाधर, सा. आ.	महाराजा संस्कृत कालेज, जयपुर	24 वर्ष
3. स्वामी, बलराम, प्राचार्य	बाहु संस्कृत कालेज, जयपुर	17 वर्ष
4. श्री सा, उपेन्द्र, प्राचार्य	रमेश्वरलता संस्कृत कालेज, दमगा	
5. श्री बटुकनाथ, मास्त्री	वाराणसी संस्कृत विश्वविद्यालय, वाराणसी	
6. पाठक, जगन्नाथ, आचार्य	लाल बहादुर संस्कृत विद्यापीठ, कच्छिनागर, दिल्ली	
7. पाण्डे, मोलानाथ, प्रोफेसर	साहित्य शास्त्राद महाविद्यालय, मदेनी द्वाराणसी	
8. मिश्र, मधुकान्त	राजकीय संस्कृत कालेज, पटना	
9. मिश्र, मण्डन, आचार्य	रणवीर केन्द्रीय संस्कृत विद्यापीठ, जम्हू	
10. सा, मदन मोहन, प्राचार्य	राजकीय संस्कृत कालेज, पटना	
11. द्विवेदी, रेवाप्रसाद, प्राध्यापक विभागाध्यक्ष	ब०एच०एच०, बनारस	
12. मास्त्री, पट्टाभिराम	वाराणसी संस्कृत विश्वविद्यालय, वाराणसी	
13. चतुर्वेदी, गिबदत्त	ब०एच०एच० वाराणसी	
14. डा० रामदत्त शर्मा	राजकीय पी०जी० कालेज, मिवाली, हरिनारा	
15. शर्मा, प्रो० जगदीश	वनस्पती विद्यापीठ, वनस्पती	
16. पाठक, डा० जगन्नाथ	केन्द्रीय संस्कृत विद्यापीठ, इलाहाबाद	

17. मिश्र, डा० हर्षनाथ

लाल बहादुर शास्त्री केन्द्रीय  
संस्कृत विद्यापीठ, नई दिल्ली

## व्याकरण

अन्तः परीक्षक :

1. झा, सूर्यनारायण, प्राचार्य	वेदवेदांग संस्कृत कालेज, चिड़ावा	30 वर्ष
2. भारद्वाज, दामोदर, प्राचार्य	रमा वैकुण्ठ संस्कृत कालेज, पुष्कर	19 वर्ष
3. मिश्रा, विश्वनाथ, प्राचार्य	शार्दूल संस्कृत विद्यापीठ, वीकानेर	18 वर्ष
4. शर्मा, चण्डीप्रसाद, प्रोफेसर	महाराजा संस्कृत कालेज, जयपुर	14 वर्ष
5. शास्त्री, घनश्याम, प्राचार्य	वाजोरिया संस्कृत कालेज, फतेहपुर	34 वर्ष
6. शास्त्री, मुनिश्वरदत्त, प्राचार्य	संस्कृत कालेज, वगड़	14 वर्ष
7. त्रिपाठी, श्यामाचरण	शार्दूल संस्कृत विद्यापीठ, वीकानेर	20 वर्ष
8. त्रिपाठी, श्रीनारायण	महाराणा संस्कृत कालेज, उदयपुर	

बाह्य परीक्षक :

1. चतुर्वेदी, रामनारायण	निदेशक संस्कृत शिक्षा, जयपुर	15 वर्ष
2. मिश्रा, खड्गनाथ, प्राचार्य	सेवा निवृत्त प्राचार्य, रा०सं० का० जयपुर	34 वर्ष
3. मोकाटे, श्रीकृष्ण शास्त्री	डी०-14/33 टेढ़ीनीम, वाराणसी	
4. मिश्र, शोभित	बड़ोदा संस्कृत महाविद्यालय, बड़ोदा	
5. शास्त्री, पं० सीताराम, प्राध्यापक व अध्यक्ष	वी०एच०यू०, बनारस	
6. त्रिपाठी, रामप्रसाद, प्राध्यापक	संस्कृत विश्वविद्यालय, बनारस	20 वर्ष
7. डा० द्विवेदी, रामअग्रव	संस्कृत विभाग, गोरखपुर विश्वविद्यालय ।	

8. त्रिपाठी, रामनारायण प्राच्य विभाग लखनऊ विश्व-  
विद्यालय, लखनऊ

### ज्योतिष

#### अन्तः परीक्षक :

1. मिश्रा, श्यामानन्द, प्राचार्य विठ्ठलनाथ संस्कृत कालेज,  
कोटा
2. शर्मा, रामपाल, प्राध्यापक महाराजा संस्कृत कालेज,  
जयपुर
3. प्रतिहस्त, नागेन्द्र विठ्ठलनाथ संस्कृत महा-  
विद्यालय, कोटा

#### बाह्य परीक्षक :

1. विष्णुकान्त झा प्रो० सनातन धर्म संस्कृत  
कालेज, अम्बाला छावनी,  
हरियाणा
2. ठक्कर, श्रीकान्त, भू०पू० प्राध्यापक, म०सं०  
कालेज, जयपुर राधा विहारी जी का मन्दिर  
त्रिपोलिया बाजार, जयपुर
3. शर्मा, कल्याणदत्त, सुपरवाईजर ज्योतिष मंत्रालय, जयपुर,  
सूरदास का कुआरा, अनाज  
मण्डी, जौहरी बाजार, जयपुर
4. त्रिपाठी, अवधविहारी वाराणसी संस्कृत वि०वि०,  
वाराणसी
5. झा, रामकृष्ण, प्रोफेसर श्यामा सं० का० नीलकंठ,  
वाराणसी
6. मिश्र, बलदेव ज्योतिष शोध कार्यालय, पटना  
विश्वविद्यालय, पटना
7. झा, लक्ष्मीकान्त, प्राचार्य बड़ोदा संस्कृत महाविद्यालय,  
बड़ोदा-6
8. झा, प्रतापनारायण नेपाल राजकीय संस्कृत महा-  
विद्यालय, मटिहाणा, जिला-  
मद्रुतरी, नेपाल

- 9 डा० रत्नेश्वर, ज्योतिषाचार्य संस्कृत महाविद्यालय, यवनेश्वर स्थान राजनगर, जिला मधुवनी (बिहार)
10. मिश्रा. देवनारायण, ज्योतिषाचार्य राज० सं० विद्यालय सेठ चांदपुरा, दरभंगा, बिहार
11. झा, यशस्पति, प्राध्यापक प्रतापनारायण सं० म० वि० बोसी, जिला-भागलपुर (बिहार)
12. मिश्र, मुरारीलाल वाराणसेय सं० वि० वि० वाराणसी
13. उपाध्याय, राजमोहन, प्राध्यापक व अध्यापक शास्त्री हिन्दु विश्वविद्यालय, 15 वर्ष काशी

### धर्मशास्त्र

#### अन्तः परीक्षक :

1. शास्त्री, राधाकृष्ण महाराजा संस्कृत कालेज, धर्मशास्त्राचार्य जयपुर

#### बाह्य परीक्षक :

1. शास्त्री, रामगोपाल, निदेशालय, सं० शिक्षा, उपनिरीक्षक राजस्थान, जयपुर
2. युधिष्ठिर, भीमासंक 4943, गली-40, रेगरपुरा, करोलबाग, दिल्ली-5
3. शर्मा, प्रभाकर रा० वि० वि० जयपुर
4. पाण्डेय, राजेन्द्रप्रसाद वी. एच. यू. वाराणसी 25 वर्ष प्राध्यापक धर्मशास्त्र
5. उपाध्याय. पं. सूर्यनारायण संस्कृत विश्वविद्यालय, 10 वर्ष प्रवक्ता धर्मशास्त्र वाराणसी

### जैन दर्शन

#### अन्तः परीक्षक :

1. जैन, गुलाबचन्द, प्राचार्य दिगम्बर जैन संस्कृत कालेज, 8 वर्ष जयपुर

2. धानुष्कर, महादेव, व्याख्याता दिगम्बर जैन संस्कृत कालेज, 8 वर्ष  
जयपुर

**बाह्य परीक्षक :**

- |   |                                |
|---|--------------------------------|
| 1. चौधरी, डा० गुलाबचन्द,<br>प्रोफेसर      | नालन्दा विश्वविद्यालय पटना     |
| 2. जैन, अमृतलाल                           | वागणसेय सं. वि. वि.<br>वाराणसी |
| 3. जैन, प्रवीणचन्द्र                      | गणेश मार्ग, वापूनगर, जयपुर     |
| 4. जैन, प्रेमसुमन                         | उदयपुर विश्वविद्यालय, उदयपुर   |
| 5. श्री गोकुलचन्द जैन,<br>जैन-बौद्ध दर्शन | वी. एच. यू. बनारस 30 वर्ष      |
| 6. पं० कैलाशचन्द शास्त्री                 | स्यादव महाविद्यालय, काशी       |

**न्याय**

**अन्तः परीक्षक :**

1. त्रिपाठी, श्रीनारायण, प्रोफेसर राजकीय संस्कृत कालेज,  
उदयपुर

**बाह्य परीक्षक :**

- |   |   |
|---|---|
| 1. मिश्र, खाड्गनाथ                                  | महाराजा संस्कृत कालेज,<br>जयपुर                       |
| 2. स्वामी, बलराम, प्राचार्य                         | दाहू महाविद्यालय, जयपुर                               |
| 3. शास्त्री, पट्टाभिराम                             | संस्कृत विश्वविद्यालय,<br>वाराणसी                     |
| 4. शुक्ल, बद्रीनाथ                                  | संस्कृत विश्वविद्यालय,<br>वाराणसी                     |
| 5. सुरेन्द्रनाथ                                     | संस्कृत विश्वविद्यालय,<br>वाराणसी                     |
| 6. शर्मा, गोविन्दनारायण                             | भूराटीवा, जयपुर                                       |
| 7. भा. पं. रुद्रधर, प्राध्यापक                      | वी. एच. यू. बनारस 25 वर्ष                             |
| 8. ब्रह्मचारी, श्री सुधांशू,<br>न्याय वेदान्ताचार्य | धंवकण संस्कृत महाविद्यालय,<br>गुरुकुल, वाराणसी 5 वर्ष |

## पुराणेतिहास

अन्तः परीक्षक :

- |                                    |  |
|------------------------------------|--|
| 1. भ्मा, प. सूर्यनारायण, प्राचार्य | वेद वेदांग संस्कृत महाविद्यालय,<br>चिड़ावा |
| 2. शास्त्री, नरेन्द्रकुमार शर्मा   | महाराणा संस्कृत कालेज,<br>उदयपुर           |

बाह्य परीक्षक :

- |                 |   |
|-----------------|---|
| 1. ठाकुर, जगदीश | मु. पो. बासोपट्टी, जिला-दरभंगा<br>बिहार |
|-----------------|---|

वेद

अन्तः परीक्षक :

- |                                  |                                 |        |
|----------------------------------|---------------------------------|--------|
| 1. भारद्वाज, चन्द्रधर, प्राचार्य | महाराजा संस्कृत कालेज,<br>जयपुर | 7 वर्ष |
|----------------------------------|---------------------------------|--------|

बाह्य परीक्षक :

- |   |  |         |
|---|--|---------|
| 1. शर्मा, प्रभूदयाल                                 | सेवा निवृत्त, उपनिरीक्षक,<br>महाराजा संस्कृत कालेज,<br>जयपुर | 7 वर्ष  |
| 2. चतुर्वेदी, रामनारायण                             | निदेशक, संस्कृत शिक्षा,<br>जयपुर                             | 15 वर्ष |
| 3. ठाकुर, जगदीश                                     | मु. पो. बासोपट्टी, जिला-<br>दरभंगा, बिहार                    |         |
| 4. गोड, बेणीराम                                     | वाराणसी  |         |
| 5. शर्मा, शिवप्रताप                                 | चौड़ा रास्ता, जयपुर  |         |
| 6. शर्मा, सूर्यनारायण                               | खेजड़ों का रास्ता, जयपुर                                     |         |
| 7. दीक्षित, रामनाथ, प्राध्यापक,<br>विभागाध्यक्ष-वेद | बी. एच. यू., बनारस   | 28 वर्ष |
| 8. मिश्र, पं. गोपालचन्द्र                           | संस्कृत विश्वविद्यालय, बनारस                                 | 25 वर्ष |
| 9. द्विवेदी, सुरेश                                  | घर्मशास्त्र संस्कृत कालेज,<br>मुजफ्फरपुर, बिहार              |         |
| 10. मिश्र, डा. युगलचन्द्र                           | 7, अध्यापक निवास संस्कृत<br>विश्वविद्यालय, वाराणसी           |         |



परिशिष्ट— 2

श्री सर्वेश्वर संसद, जयपुर

दिनांक 23.7.1979

क्रमांक नि. ती./पा.भ.~/512

सेवानें,

श्रीयुक्त कुलसचिव महोदय,

राजस्थान विश्वविद्यालय, जयपुर

विषय : शास्त्री : प्रथम वर्ष : के निम्नार्क दर्शन के पाठ्यक्रम में आवश्यक आंशिक संशोधन :

मान्यवर,

सविनय निवेदन है कि शास्त्री : प्रथम वर्ष : निम्नार्क दर्शन के पाठ्यक्रम में क्रमशः प्रथम व द्वितीय पत्रों में निर्धारित : अर्थ पंचक निर्णय : तथा : तत्त्व सिद्धान्त विन्दु : उपाध्याय के पाठ्यक्रम में रख दी गई है और बोर्ड का स्वीकृत उक्त पाठ्यक्रम सर्वत्र प्रसारित किया जा चुका है ।

निम्न कक्षाओं में अवीन ग्रन्थ ही उच्च कक्षा में पुनः पढ़े जावे—यह उचित नहीं है । ऐसी स्थिति में केवल शास्त्री प्र. व. : निम्नार्क दर्शन : के प्रथम व द्वितीय पत्रों में निम्नलिखितानुसार आंशिक संशोधन करने की कृपा करें ।

प्रथम पत्र में

पूर्व निर्धारित : अर्थ पंचक निर्णय : के स्थान पर इसे हटाकर : द्वैताद्वैत विवेक : भागीरथ कृत रख दिया जावे । यह : द्वैताद्वैत विवेक : शास्त्री स्तर के अनुरूप एवं प्रकाशित होने से सर्व सुलभ भी है ।

द्वितीय पत्र में

: तत्त्व सिद्धान्त विन्दु : पाठ्य से हटा दी जावे तथा इसके लिए नियत 20 अंक इसी पत्र में पूर्व निर्धारित : लघु मंजूपा : के लिए नियत 60 अंकों में जोड़कर केवल : लघु मंजूपा : 80 अंक की कर दी जावे । वास्तव में यह प्रौढ़ होने से 80 अंक के ही योग्य है, अतः यहां तत्त्व सिद्धान्त विन्दु : के स्थान पर अन्य पुस्तक निर्धारित करने की आवश्यकता नहीं है ।

आशा है, उक्त संशोधन के साथ स्वीकृत शास्त्री व आचार्य के पाठ्यक्रम से अवगत कराने की अनुग्रह करेंगे ।

भवदीय,

ह०/- संयोजक—विद्वत् समिति,

श्री सर्वेश्वर संसद, जयपुर

क्रमांक नि. ती./पा. ऋ./514

दिनांक 23.7.79

प्रतिलिपि :

श्री श्यामनन्दन मिश्र,

संयोजक—पाठ्य निर्माण समिति, राजस्थान विश्वविद्यालय : प्राचार्य  
श्री विठ्ठलनाथ आचार्य, संस्कृत महाविद्यालय : कोटा : को प्रेषित कर निवेदन है  
कि उक्त अपेक्षित संशोधन को अपनी अनुशंसा के साथ कुलसचिव को भेज कर  
सुधार से अवगत कराने की कृपा करें ।

विनीत :

ह०/-

श्री राम गोपाल शास्त्री

संयोजक—विद्वत् समिति श्री सर्वेश्वर संसद,  
जयपुर ।

मूल संशोधन प्रस्ताव विचारार्थ अध्ययन मण्डल की बैठक में प्रस्तुत हो ।

पं० श्यामनन्दन मिश्र

संयोजक

संस्कृत अध्ययन मण्डल,  
राजस्थान विश्वविद्यालय,  
जयपुर ।

## परिशिष्ट—III

(संदर्भ मण्डल की निश्चय संख्या 8)

शास्त्री प्रथम वर्ष परीक्षा, 1981

वर्ग 1—अनिवार्य विषय :

1. सामान्य संस्कृत एक पत्र	पूर्णांक	उत्तरांक
अथवा	100	36
पूर्व आयुर्वेद एक पत्र		

“क” आयुर्वेदेतिहासः अंक 50

1. भारतीय भैषज्यविधायाः प्राचीनत्वम् ।
2. आयुर्वेदस्य शास्वतत्वम्, अनादित्वं च ।
3. वेदेष्वायुर्वेदः, तस्योपशेदत्वम्, आयुर्वेदावतरणम् ।  
आत्रेय-धन्वत्तयोः परम्परादयस् परिचयः ।
4. चरक सुश्रुतादिप्राचीन संहिताकारा आचार्याः प्रतिसंस्कर्तारश्च ।
5. आयुर्वेदस्यांगोपागानामितिवृत्तं विकास क्रमश्च ।
6. आयुर्वेदस्य सार्वभौमता-सुमेर-बाबुल-असुर-मिश्र-चीन-फारस-अरवादिदेशेषु कम्बुजादि दक्षिण पूर्वदेशेषु आयुर्वेदस्य प्रसारः ।
7. ऐलोपैथीजनकस्य हिपोक्रेटिस महाभागस्यो परिआयुर्वेदस्य प्रभावः, यवनैः भारतीय विषयाणामुपादानम्, भारतीय विदुषां-ग्रीसोपगमः, अलेक्जेंडर द्वारा भारतालोक प्रसारः, ग्रीसभारतयोः पुराकालात् सम्बन्धः, ग्रीसेशस्त्र वैद्यकस्य पश्चात् प्रसारः ।
8. भारता लोक प्रसारे अशोकशिलालेखाः ।
9. प्राचीन मित्रे भैषज्यविज्ञानम्, असुर-बाबुलयोः पूर्वभैषज्यज्ञानम्, तयोः भारतीय शब्दादिसाम्यम् ।
10. प्राचीन भारतस्य देशान्तर सम्बन्धः ।
11. भारतीय भूगर्भतः प्राचीन भैषज्यदृष्टिः ।
12. प्राचीन भारते सैन्य चिकित्सा पशु चिकित्सा च ।
13. दृष्ट्ययी, लघुभयी तयोरेतिहासिकानुशीलनम् ।
14. आयुर्वेद संहितानाम् व्याख्याकाराः जेज्जर-चक्रपाणि इत्यादयः ।
15. आयुर्वेदीय शिक्षणस्य विकासक्रमः, आयुर्वेदग्रन्थसंज्ञान प्रवर्तनं च ।
16. आयुर्वेदस्य राज्यमान्यता वैभवव्यवसायः, वैद्यानांसंगठनं च ।
17. आयुर्वेदीय पत्रपत्रिकाणामितिवृत्तम् ।

## “ख” आयुर्वेद परिचयः

अंक 50

1. आयुधो लक्षणम् । आयुर्वेदस्य लक्षणम् ।
2. आयुर्वेदस्यांगानि तेषां स्वरूपं च ।
3. विविधागमानां प्रमुखग्रन्थाः ।
4. आयुर्वेदस्य प्रयोजनम् । स्वस्थलक्षणम् ।
5. आयुर्वेदस्य वैशिष्ट्यं वैज्ञानिकत्वं च ।
6. आयुर्वेदस्याध्ययनाधिकारिणः, ज्ञानोपाया, कर्मोपासनम् उभयज्ञता, बहुलता च ।
7. संभाषाविधिः, ऋषिपरिषदां परिचयः ।
8. आयुर्वेदस्य लोकहितैषित्वम्, चिकित्सस्य पुण्यमयत्वं च ।
9. आयुर्वेदस्य मूलसिद्धान्ताः पञ्चभूतानि, भिदोषां सप्तधातवः प्रकृतिविचारः रसगुणवीर्यविपाकादयः एताषां सामान्य परिचयः ।

## आलोच्यग्रन्थाः :

1. काश्यप संहिताया उपोद्घातस्य भारतीय भेषज्य समर्थन परिच्छेदो ।
2. आयुर्वेद का इतिहास (वैद्य सूरमचन्द) ।
3. आयुर्वेद सूत्रम् (पं. रामप्रसाद जी) ।
4. आयुर्वेद का वृहत् इतिहास—वैद्य अभिदेव गुप्त ।
5. हिस्ट्री आफ आयुर्वेद—जी. एन. मुखोपाध्याय ।
6. इण्डियन मैडिसन इन दि क्लासिकल एज—वैद्य प्रियव्रत शर्मा ।
7. रसयोग सागर—उपोद्घातः ।
8. प्रत्यक्षशारीरम्—उपोद्घातः ।
9. काश्यप संहिता—उपोद्घातः ।
10. वेदों में आयुर्वेद—रामगोपाल शास्त्री ।
11. वारम्भट विवेचन—वैद्य प्रियव्रत शर्मा ।
12. चरक चिन्तन—वैद्य प्रियव्रत शर्मा ।
13. अथर्ववेद एण्ड आयुर्वेद—करमबलकार ।
14. हिस्ट्री आफ इण्डियन मैडिसिन—जाली ।
15. हिन्दु मैडिसिन—जिम्परे ।
16. आयुर्वेदिक मैडिसिन पास्ट एण्ड प्रेजेन्ट—पं. शिव शर्मा ।
17. आवर ग्लोरिया हैरिटेज—डा. रुस्तमजी वकील ।
18. हिस्ट्री आफ आयुर्वेद—डा. कुटुम्बिया ।
19. आयुर्वेद का वैज्ञानिक इतिहास—प्रियव्रत शर्मा ।
20. आयुर्वेद परिचय—श्री राजकुमार जैन ।

## परिशिष्ट - IV

संस्कृतव्ययन संकाय की निश्चय संख्या 2 (III) दिनांक 9 एवं 10 जनवरी, 1978 द्वारा शास्त्री द्वितीय एवं तृतीय वर्ष परीक्षाओं के निमित्त वर्ग (I) के अन्तर्गत अनिवार्य विषय सामान्य संस्कृत के व्याकरणांश निर्धारित करने हेतु गठित समिति की दिनांक 17 अगस्त, 1979 को कुलपति सचिवालय विश्वविद्यालय प्रंगर, जयपुर में नव्याह 12.00 बजे सम्पन्न हुई बैठक का कार्यवाही विवरण :

## उपस्थित :

1. विश्वनाथ मिश्र, बीकानेर (संयोजक)
  2. चण्डीप्रसाद चार्प, जयपुर
  3. रावेस्वाम कलावडिया, बीकानेर
- (श्री मुनीश्वर दत्त शास्त्री अनुपस्थित रहे)

1. समिति ने संकाय की निश्चय संख्या 2 (III) दिनांक 9 एवं 10 जनवरी, 1978 को सर्वप्रथम अभिलिखित किया तथा शास्त्री द्वितीय वर्ष एवं तृतीय वर्ष परीक्षा, 1980 एवं इसके आगे के लिए वर्ग (I) के अन्तर्गत अनिवार्य विषय सामान्य संस्कृत के व्याकरणांश के सूत्र (परिशिष्ट I तथा II) निर्धारित कर स्वीकार करने की संसुति की।
2. समिति ने शास्त्री द्वितीय एवं तृतीय वर्ष की परीक्षा हेतु निर्धारित व्याकरणांश सूत्रों को जिनमें कुछ अशुद्ध थे सुद्ध किया तथा संशोधित किया वे संशोधन कार्यालय द्वारा प्रेषित उत्तमवर्णित पाठ्यक्रम की पाण्डुलिपि में किया गया। समिति ने संसुति की कि सामान्य संस्कृत विषय में जिस सङ्क्षेप की पूर्ति हेतु व्याकरणांश रखा गया है उसके लिए यह संकलन अपर्याप्त है इसलिए शास्त्री प्रथम वर्ष की भांति द्वितीय एवं तृतीय वर्ष शास्त्री परीक्षा के लिए भी अनुभवी विद्वानों द्वारा पुस्तक का निर्माण कराया जाये जिसमें उदाहरणप्रत्योदाहरण द्वारा इन सूत्रों का विषय विवेचन किया गया हो।

समिति की बैठक बन्धुवाद के प्रस्ताव के साथ समाप्त हुई।

हं०

(विश्वनाथ मिश्र)

संयोजक

## परिशिष्ट - I

शास्त्री द्वितीय वर्ष परीक्षा 1980 व आगे :—

वर्ग—I सामान्य संस्कृत

प्रथम पत्र

(क) व्याकरण (सूत्रात्मक शैली से सोदाहरण)

50 अंक

कारक प्रकरण से चुने हुए निम्नांकित 80 सूत्र

20 अंक

1. प्रातिपादिक कार्यालय परिमाण वचन मात्रे प्रथमा ।
2. सम्बोधने च ।
3. कर्तुरीप्सिततमं कर्म ।
4. तयाद्युक्तं चानीप्सितम् ।
5. कर्माणि द्वितीया ।
6. अकथितं च ।
7. गतिदुद्धि प्रत्यवसनार्थशब्द कमीकर्मकारणामाणि कर्ता स एष ।
8. ह्योरन्यतरस्याम् ।
9. अविशीङ्स्यात्तां कर्म ।
10. अभिनिविशश्च ।
11. अन्तरान्तरेण मुक्ते ।
12. अनुलक्षणे ।
13. कर्मप्रवचनीययुक्ते द्वितीया ।
14. उपांशविके च ।
15. लक्षणे तयं भूतात्मान भागवीप्सानु प्रतिपर्यन्तवः ।
16. अतिरतिक्रमणे च ।
17. अपिःपदार्थ सम्भावनात्त्वसगर्हं सुमुच्चेयेषु ।
18. कालाध्वनोरत्यन्तसयोगे ।
19. स्वतन्त्रः कर्ता ।
20. साधकतकं करणम् ।
21. कर्तृकरणयोस्तृतीया ।
22. अपवर्गे तृतीया ।
23. सहयुक्ते प्रधाने ।
24. येनाङ्गविकारः ।
25. इत्यम्भूत लक्षणै ।

26. हेतौ ।
27. कर्मणा यमभिप्रेति स सम्प्रदानम् ।
28. चतुर्थो सम्प्रदाने ।
29. खन्यर्थानां प्रीयमाणः ।
30. क्रुधद्वहेर्ष्यासूवार्थानां यं प्रतिकोषः ।
31. प्रत्याऽभ्यांश्चुवः पूर्वस्य कर्ता ।
32. अनुप्रतिगृणाश्च ।
33. परित्ययो सम्प्रदानमन्यतरस्याम् ।
34. क्रियार्थोपपदस्य च कर्मणि स्थानिनः ।
35. तुमर्थाच्च भाववचनात् ।
36. स्पृहेरीप्सितः ।
37. नगः स्वस्तिस्वाहास्वर्धालवपद्योगाच्च ।
38. गत्यर्थकर्मणि द्वितीया चतुर्थ्या चेष्टायामानघ्वत्वि ।
39. घ्रुवमपाये ड पादानम् ।
40. अपादाने पंचमी ।
41. भौत्रार्थानां भयहेतुः ।
42. पराजेरसोढः ।
43. वारणार्थनामीप्सितः ।
44. अन्तर्धौ येनादर्शनमिच्छति ।
45. जनिकतुः प्रकृतिः ।
46. आख्यातोपयोर्मे ।
47. मुवः प्रभवः ।
48. अन्यारादितरत्तं दिग्शब्दोच्चुत रूपदाजाहिन्युक्ते ।
49. विभाषा गुरो अस्त्रियामा ।
50. पृथग्विनानामिस्तृतीया अन्यतरस्याम् ।
51. दूरान्तिकाभ्यां द्वितीया च ।
52. पण्ठी शेषे ।
53. पण्ठीहेतु प्रयोगे ।
54. सर्वनाम्नस्तृतीया च ।
55. पण्यतसर्थ प्रत्ययेन ।
56. एनपा द्वितीया ।
57. दूरान्तिकार्थः पण्यन्यतरस्याम् ।
58. जो ङ विदर्ध सयकरणे ।

59. अवीगर्थज्येषां कर्माणि ।
60. कृत्रः प्रतिपत्ते ।
61. राजार्थानां भाववचनानामज्वरैः ।
62. व्यवहृत्पणोंः समर्थयोः ।
63. दिवस्तदर्थस्य ।
64. कृत्त्वोर्ज्यं प्रयोगे कालेऽविकरणे ।
65. कर्तृकर्मणोंः कृतिः ।
66. उभयप्राप्तो कर्मणि ।
67. तत्त्व च वर्तमाने ।
68. अविकरणवाचिनश्च ।
69. न लोकाव्यय निष्ठाखलर्थतुलान् ।
70. कृत्यानां कर्तरि वा ।
71. तुल्यार्थस्तुलोपमान्यां तृतीयान्यतरस्याम् ।
72. आधारेऽविकरणम् ।
73. सप्तम्यविकरणे च ।
74. यस्य च भावेन भावलक्षणम् ।
75. षष्ठों चानादरे ।
76. यतश्च निघारणम् ।
77. पंचमी विभक्ते ।
78. साधुनिपुणान्यामर्चायां सप्तम्यप्रतेः ।
79. प्रसितोत्तुकान्यां तृतीया च ।
80. सप्तमीपंचम्यौ कारकमध्ये ।

(II) लकारार्थं प्रकरणं ते कुते हृए निम्नांकित 30 सूत्र

10 अंक

1. अभिज्ञावचने लृट् ।
2. न यदि ।
3. प्रस्ते चासन्न काले ।
4. लट् स्मै ।
5. पुरिलुङ् चास्मै ।
6. यावत्पुराणिपातयोलट् ।
7. विभाषा कदाकह्योः ।
8. वर्तमानं सानीप्ये वर्तमानवद्वा ।
9. आशचाया हूतवच्च ।



10. मिप्रवचने लृट् ।
11. अगंसा वचने लिङ् ।
12. गह्व्या लट्प्रियात्तोः ।
13. विमया कयन्ति लिङ् च ।
14. किवृत्ते लिङ् लृटो ।
15. जानुयदोलिङ् ।
16. गह्व्यां च ।
17. चित्रीकरणे च ।
18. हेतुहेतुनतोलिङ् ।
19. इच्छायेन्नु लिङ् लोटौ ।
20. इच्छायेभ्यो विभाषा वर्तमाने ।
21. प्रप्रापिसर्ग प्राप्तकालेषु कृत्याश्च ।
22. लिङ् चोर्ध्वमौहृतिके ।
23. सस्मै लोट् ।
24. अह् कृत्यनृचश्च ।
25. क्रियासमभिहारे लोट् लोटौ हिस्वी वा च तव्वमोः ।
26. समुच्चेये अन्यतरस्याम् ।
27. यदादिव्यनुप्रयोगः पूर्वास्तिङ् ।
28. समुच्चेये सामान्य वचनस्य ।
29. ननौ पृष्ठप्रतिवचने ।
30. शक्ति लिङ् च ।

(III) उद्धृतप्रकरण से चुने हुए निम्नांकित 65 सूत्र

20 अंक

शैषिक

(शैषिक—स्वायिक)

1. वेपे ।
2. राष्ट्रादारपाराद्धरश्री ।
3. ग्रामाद्यस्तत्रौ ।
4. नद्यादिभ्यो ङक् ।
5. वसिष्ठावश्वात्पुरुस्तस्यक् ।
6. अव्ययात्पप् ।
7. ऐयमौ ह्यः स्वतोऽन्यतरस्याम् ।
8. वृद्धयेस्याचामादिस्तद् वृद्धम् ।
9. वृद्धाच्छः ।

10. भवतण्ठकाछसी ।
11. अरण्यान्मनुष्ये ।
12. घन्वयोपधाद् वृण्ज ।
13. नगरात्कुत्स न प्रावीण्यर्योः ।
14. गहादिभ्यश्च ।
15. कोपधाद्गण ।
16. राज्ञः कः च ।
17. युस्मदस्मदोरन्यतरस्यां खन्च ।
18. तस्मिन्नणि च युष्माकास्मको ।
19. तवकममकावेकवचने ।
20. प्रत्ययोत्तर पदयोश्च ।
21. मध्यान्मः ।
22. द्वोपदनुसमुद्धंय ।
23. कालाट्ठ
24. आद्धे शरदः ।
25. निशाप्रद्धीपाभ्यां च ।
26. वर्षाभ्यण्ठक्
27. सांमचिरं प्राहेप्रगे व्ययेभ्यण्डुट्पुलो तुट्च ।
28. तत्रजात
29. प्रव्रषण्ठय ।
30. जिह् वामूलाङ्गुलेच्छः ।
31. वर्गान्ताच्च ।
32. अधिकृत्य कृते ग्रन्थे ।
33. तत आगतः ।
34. वासुदेवार्जुनाभ्यां टुच्
35. तेन प्रोक्तम्
36. तस्येदम्
37. हलसीराट्ठक्
38. गोत्रचरणाद्भुञ्ज

स्वाधिक—

39. इवे प्रतिकृती ।
40. संज्ञायां च ।
41. लुम्भनुष्ये ।

42. जोविकार्यं चापण्ये ।
43. शिलायाः ढः
44. कुशांग्राच्छः
45. समासाच्च तद्विपयात् ।
46. संख्यायाः क्रियाभ्यादृतिगणने कृत्वसुच्
47. द्वित्रिचतुर्भ्यः सुच्
48. एकस्यसकृच्च
49. तत्प्रकृतवचने भयद् ।
50. पादार्धाभ्यां च ।
51. अतिथेऽर्थः
52. देवात्तल्
53. अवेःकः
54. प्रजादिभ्यश्च ।
55. मृदस्तिकम् ।
56. सस्त्री प्रशंसायाम् ।
57. बहुवल्यायां च्छस्कार का दन्त्यतरस्यम् ।
58. प्रतियोगे पंचम्यास्तसिः
59. कृभ्वस्तियोगे सम्पघकतरेच्चिः ।
60. विभाषा साति-कात्स्न्ये ।
61. अस्य च्चौ ।
62. क्यच्च्योश्च ।
63. च्चौ च ।
64. अव्यक्तानुकरणाद् द्वजं वरावादनितौङ् ।
65. समयाच्च यापानायाम् ।

विशेष अवधेयः—

विभक्तयर्थं विवेकपूर्वकं विभक्तियों के प्रयोग क्षेत्र का परिज्ञान ।  
जैसे—“निविशते यदि शूकसित्वा पदे” ऐसे प्रयोगों में “अभिनिविशश्च” सूत्र की प्रवृत्ति होगी या नहीं ? यहां द्वितीया संभव है या नहीं ? सह, नमः पृथक्, विना, नाना, आदि शब्दों के योग में कौन सी विभक्ति होना सूत्राभिमत है ? कारकों के आवार पर बुद्धिगम्य व्युत्पत्तिवर्क प्रश्न पूछे जायें ।

इसी प्रकार तद्धित में लोक प्रचलित प्रयोगों से व्यावहारिक ज्ञान । तद्दिशीय प्रयोगों का सार्थक सविग्रह ज्ञान । निदिष्ट विग्रह वाक्य के आधार पर प्रयोग सिद्ध करने की क्षमता का विकास अपेक्षित है ।

कालभेदानुसार लकार प्रयोग परिचय । तत्तत् पदांक के योग में तत्तत् लकारों के प्रयोग का परिचय । जैसे —“वसन्तीहपुरा छात्राः” इसमें अन्य कौन 2 से लकार सूत्रानुमय हैं ? इसका सम्यग् बोध ।

## परिशिष्ट II

शास्त्री अन्तिम वर्ष परीक्षा, 1980 एवं आगे वर्ग-I सामान्य संस्कृत

(क) व्याकरण सूत्रात्मक शैली से सोदाहरण

50 अंक

(I) कृदन्त प्रकरण से चुने हुए निम्नांकित 50 सूत्र

20 अंक

(1) वा सरूपो स्त्रियाम् (2) कर्तीस्कृत् (3) तयोरे कृत्यत्तरवल्थः  
 (4) तव्यत्तव्यानीयरः (5) अचोयत् (6) ईधति (7) पोरदुपधात् (8) वदः  
 सुपिक्यप्च (9) ह्रस्वस्यपितिकृति तुक् (10) एतिस्तुशास्वृद्रजुवक्यय (11) ऋह-  
 लोर्ण्यत् (12) ण्वलुत्ची (13) युवोरनाकौ (14) नन्दिन्नहिपचादिभ्यो ल्युणि-  
 न्यचः (15) इगुपधज्ञाप्रवैकिरःकः (16) गेहेकः (17) कर्मण्यण् (18) आतो  
 नुपसर्गकः (19) चरेष्टः (20) कृहेतुताच्छील्यानुलोम्येषु (21) एजेःखश् (22)  
 अनर्द्धिपउजन्तस्य मुम् (23) प्रिसवशेवदःखच् (24) द्विपतपरयोस्तापेः (25)  
 खचिह्रस्वः (26) सुण्यजातौणिनिस्ताच्छील्ये (27) क्तक्त वतूनिष्ठा (28) निष्ठा  
 (29) रदाभ्यां निष्ठातो नः पूर्वस्य च दः (30) लटः शतृशतृशानचा व प्रथमा-  
 समानाधिकरणे (31) आने मुक् (32) तौ सत् (33) लृटः सद्दा (34) तुमुन्-  
 वली क्रियायां क्रियायायाम् (35) समानकर्तृकेयुतमुन् (36) काल समयवेलासु  
 तुमुन् (37) भावे (38) एश्च् (39) ऋदोरप् (40) यजयाचयतावित्रद्यप्रच्छरक्षो  
 नङ् (41) स्वपोनन् (42) उपसर्गघोःकिः (43) स्त्रिया क्तिन् (44) अप्रत्ययात्  
 (45) ण्यासंश्रन्यः युच् (46) ल्युट्च (47) हलश्च (48) अलंखल्वोः प्रतिषेधयोः  
 प्रा चांस्वा (49) समान कर्तृकृत्योः पूर्वकाले (50) आभीक्ष्ण्येणमुल ।

(II) आत्मनेपद परस्मैपद के निम्नांकित चुने हुए 30 सूत्र 10 अंक

(1) भावकर्मणोः (2) नेविशः (3) विपराभयांजेः (4) समवप्रविभः  
 स्थ (5) सदोनूर्ध्वकर्मणि (6) वैः शब्दकर्मण (7) वृत्तिसर्गतायनेपुक्रमः (8) आहः  
 सदगमने (9) वेः पादविहरणे (10) अपहवे ज्ञः (11) अकर्मकाच्च (12)  
 व्यक्तावाचांसमुच्चारणे (13) विभाषाविप्रलापे (14) अवाद्ग्रः (15) समःप्रति-  
 जाने (16) उदश्चरःसकर्मकात् (17) समस्तुतीयायुक्तात् (18) उपाधमः स्वकरणे  
 (19) ज्ञाध्रुस्मृध्रौ सनः (20) नानोक्तः (21) भुजो नदने (22) अपाद्वदः  
 (23) अनुपसर्गाजिभः (24) अनुपराभ्याकृञ् (25) प्रादवहः (26) पेरमृषि  
 (27) व्याङ् परिभ्यारेमः (28) उपाच्च (29) दुधदुधनराजनेङ् प्रद्रल्लुभ्योपः  
 (30) निगरणचलनाथैभ्यश्चः ।

(III) समास प्रकरण के चुने हुए निम्नांकित 50 सूत्र 10 अंक  
समास प्रकरण के चुने हुए सूत्र

(1) समर्थः पदविधिः (2) सहसुपा (3) सुपोवातुप्रातिपदिकयोः (4) अव्ययं विभक्ति समीप समृद्धिव्यूहपर्याभावात्प्राप्तमिति शब्दप्रायु भविष्यत्वाध्यातु पूर्व्य योगपक्षसाद्रश्य सम्मति साकल्पनान्त वचनेषु । (5) प्रथमानिदिष्टं समास उपसर्जनम् (6) उपसर्जनं पूर्वम् (7) एकविभक्तिचापूर्वनिपाते (8) गोस्मिन्मूर्ख सर्जनस्य (9) ययाऽसादृश्ये (10) पारेमध्ये पष्ठया वा (11) संख्या वश्येन (12) नदीभिश्च (13) द्वितीया श्रितातीत पतितगता त्यस्त प्राप्तापत्नैः (14) तृतीया तत्कृतार्थेन गुणवचनेन (15) कर्तृकरणे कृता बहुल (16) चतुर्थी तदर्थावलिहि तन्मुखरभितः । (17) पञ्चमी मयेन (18) पठ्ठी (19) उपमानानि सामान्यवचनैः (20) उपमितं व्याघ्रादिभिः सामान्याप्रयोगे (21) विशेषणं विशेष्येण बहुलम् (22) सम्महत्परमो त्तमोऽकृष्टाः पूज्यमानैः (23) कुगति प्रादयः (24) नञे (25) मयूरव्यंस का द्यश्च (26) उपपदमतिङ् (27) राजाहःसन्निभश्च (28) आन्म हतः समामाधिकरण जातीययोः (29) अनेक मन्यपदार्थे (30) दिङ् नामान्य न्तराले (31) तत्रत्तेनेदमिति सरूपे (32) तनेसहेति तुल्ययोगे (33) इच- कर्मव्यतिहारे (34) जायाया निङ् (35) गन्वस्येदुत्पूतिसुसुराभिम्यः (36) वयसि दन्तस्ये दट् (37) पादस्यलीपोऽहस्त्यादिभ्यः (38) ङःप्रभृतिभ्यःकपू (39) शेषाद्विभाषः (40) सप्तमीविशेषणो बहुव्रीहौ (42) चार्यद्वन्द्वः (43) द्वेष्टिः (44) येषोच विरोधः शाश्वतिकः (45) अजावदन्तम् (46) अत्याचूतरम् (47) द्वन्द्वच प्राणितुयंसेना इगानाम् (48) आनएताद्वन्द्वे (49) देवता द्वन्द्व च ईदन्तेः सोमवरुणायोः (50) द्वन्द्वाच्छुदपहान्तात्समाहारः ।

(iii) लिङ्गानुशासन के 30 सूत्र

1. अकारान्ता मातृदुहिबृत्त्वसृयातृनान्दारः ।
2. मिन्यन्तः ।
3. क्तिन्नन्तः ।
4. ई प्रत्ययान्तश्च ।
5. विशत्यादिरानवत्तेः ।
6. तत्तन्तः ।
7. अप् सुमनस् समासिकता वर्षाणा बहुत्वं च ।
8. घ वन्तः ।
9. घाजनतश्च ।
10. नङन्तः ।

11. उदन्तः ।
12. क्वन्तः ।
13. सक्त्तुं पुंसके च ।
14. कोपवः ।
15. टोपवः ।
16. एोपवः ।
17. मोपवः ।
18. योपवः ।
19. दिताह्नी नपुंसके ।
20. द्रोणादको नपुंसके च ।
21. द्वाराक्षत लाजासूचनां बहुत्वं च ।
22. भावे ल्युङन्तः ।
23. निष्ठा च ।
24. इक्षुसन्तः ।
25. वक्त्रनेत्रारण्य गाण्डी वानिपुंसि च ।
26. अटवी स्त्रियाम् ।
27. घतादि संख्या ।
28. ब्रह्मपुंसि च ।
29. अप्पन्नाः स्त्रियाम् ।
30. अर्वाः पुंसि च ।

विशेष अवधेयः —

कर्तृकर्मभाव वाच्य के विवेक पूर्वक कृदन्त के सूत्रों से निर्मित प्रयोगों का व्यावहारिक ज्ञान । उदाहरण प्रत्युदाहरण सहित सूत्रार्थ का ज्ञान । कृदन्त सूत्रों एवं समास के सूत्रों के माध्यम से अशुद्ध प्रयोगों का संशोधन जैसे— 'कदाचित् उष्णमेजी' का कदाचित् उष्णं भुक्ते शुद्ध प्रयोग होगा । इसी प्रकार समासों में भी "आत्महतः समानाधिकरण जातीययो के उदाहरण में महतां सेवा इस विग्रह में भी" "महासेवा" प्रयोग क्या साबु है । इस प्रकार के शुद्ध गम्य प्रश्न प्रष्टव्य हैं ।

इसी प्रकार आत्मने पद व परस्मैपद में भी 'प्रवहमानः' शुद्ध है या अशुद्ध । ऐसे प्रयोगों में शुद्धाशुद्ध विवेक अपेक्षित है ।

विलिंगानुशासन में सूत्रों के आधार पर प्रचलित प्रयोगों का व्यावहारिक ज्ञान ।

(संदर्भ संकाय की कार्य सूची की विन्दु संख्या 8)

चिकित्सा एवं जन स्वास्थ्य विभाग (ग्रुप—4)

क्रमांक प० 3(1) आयु०/79

जयपुर, दिनांक 22-1-80

कुलसचिव,

राजस्थान विश्वविद्यालय,

जयपुर (राजस्थान)

विषय:— 'प्री-आयुर्वेद' कोर्स तथा "आयुर्वेदाचार्य" (बी.ए.एम.एस.) डिग्री के सम्बन्ध में ।

महोदय,

निर्देशानुसार लेल है कि जुलाई 1974 से "प्री आयुर्वेद" पाठ्यक्रम राज्य के आयुर्वेद महाविद्यालयों में चालू किया गया था। इस पाठ्यक्रम को बिना राज्य सरकार की अनुमति के संस्कृत कालेजों में संचालित किया जा रहा है जबकि राज्य सरकार द्वारा "प्री आयुर्वेद" में प्रवेश हेतु आयुर्वेदिक कालेजों में सीटों की संख्या निर्धारित की हुई है। अतः "प्री आयुर्वेद" की परीक्षाएँ आयुर्वेद फॅकल्टी से ही होनी चाहिये।

सैन्ट्रल कार्सिल आफ इन्डियन मेडिसीन, नई दिल्ली के निर्देशानुसार 1974 से आयुर्वेद के साढ़े पांच वर्षीय पाठ्यक्रम उत्तीर्ण करने वाले स्नातकों को सन् 1980 से ही "आयुर्वेदाचार्य (बैचलर आफ आयुर्वेद मेडिसीन एवं सर्जरी)" की डिग्री दिया जाना उचित है और इसे बदलने का कोई औचित्य नहीं है, अन्यथा छात्रों में असन्तोष होगा। कृपया इस विषय में आवश्यक निर्णय करावे।

भवदीय,

ह०/-

एस० पी० जैन

उप शासन सचिव

1. प्रतिलिपि निजी सचिव, राज्य मन्त्री आयुर्वेद, राजस्थान जयपुर को सूचनाय प्रेषित है।

ह०/-

उप शासन सचिव